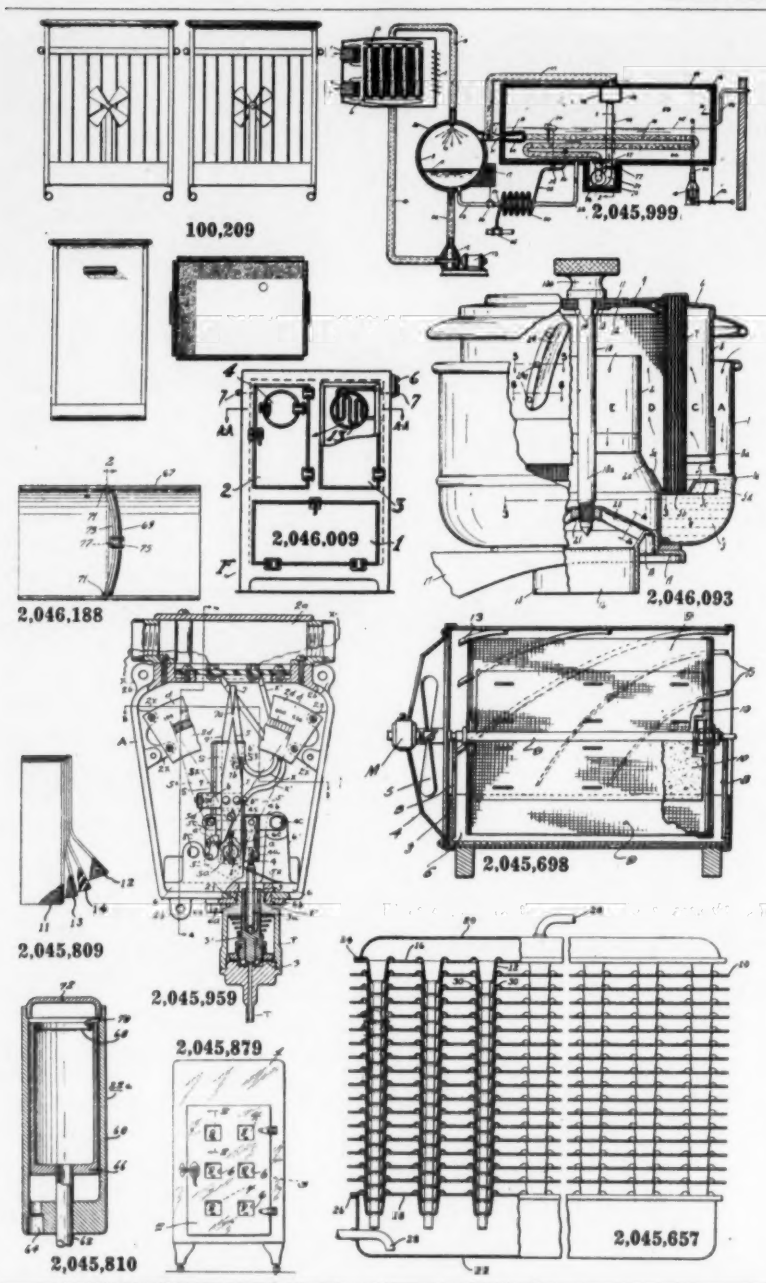


Patents

Issued June 30, 1936

2,045,657. HEAT EXCHANGE APPARATUS. John Karmazin, Huntington, Ind., assignor to Karmazin Engineering Co. Application April 13, 1935. Serial No. 16,207. 5 Claims. (Cl. 257—139.)

2,045,698. AIR CONDITIONING DEVICE. Viggo Christoffersen, Boise, Idaho. Application Oct. 15, 1935. Serial No. 45,152. 4 Claims. (Cl. 261—92.)

2,045,809. REFRIGERATING APPARATUS. Otto M. Summers, Dayton, Ohio, assignor, by mesne assignments, to General Motors Corp. Application Oct. 31, 1928. Serial No. 316,331. Renewed June 5, 1935. 4 Claims. (Cl. 74—233.)

2,045,810. REFRIGERATING APPARATUS. Ralph L. Tweedale, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio. Application Oct. 19, 1934. Serial No. 749,025. 6 Claims. (Cl. 138—42.)

2,045,879. AUXILIARY COMPARTMENT FOR REFRIGERATOR DOORS. Abraham S. Shafer, Philadelphia, Pa. Application Oct. 1, 1934. Serial No. 746,461. 3 Claims. (Cl. 20—35.)

2,045,959. TEMPERATURE CONTROL. Howard W. Partlow, Utica, N. Y., assignor to The Partlow Corp., New Hartford, N. Y. Application June 27, 1935. Serial No. 28,775. 5 Claims. (Cl. 200—140.)

2,045,999. WATER REFRIGERATION. Ralph C. Roe, Englewood, N. J. Application Feb. 23, 1933. Serial No. 658,106. 17 Claims. (Cl. 62—115.)

2,046,009. REFRIGERATOR. Peter J. Wiezevich, Elizabeth, N. J. Application June 13, 1932. Serial No. 616,787. 3 Claims. (Cl. 62—116.)

2,046,093. AIR FILTER MEANS. Albert E. Schaaf, Cleveland, and George M. Walton, Parma, Ohio, assignors to Air-Maze Corp., Cleveland, Ohio. Application March 11, 1935. Serial No. 10,374. 20 Claims. (Cl. 183—15.)

2,046,188. THERMOSTATICALLY CONTROLLED DEVICE. John A. Spencer, Newtonville, Mass., assignor to General Plate Co., Attleboro, Mass. Original application Aug. 22, 1934. Serial No. 740,878. Divided and this application April 29, 1935. Serial No. 18,810. 6 Claims. (Cl 236—34.)

DESIGNS

100,209. DESIGN FOR A PORTABLE AIR CONDITIONING APPARATUS. William H. Fabry, Alhambra, Calif. Application May 11, 1936. Serial No. 62,594. Term of patent 7 years.

PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

Questions

I. M. E. Ratings of Units

No. 2849 (Dealer, Indiana) — "I understand that in some number this year, April 15, you gave the I. M. E. capacity and the running time of the 1936 models. I should like to have this particular number. Also, I would like something giving full information on F 114, used by Frigidaire, which I sell at this time."

Answer: We believe that the issue, you have reference to is not the April 15 issue, but either the July 1 issue in which were published complete specifications of household electric refrigerators (including capacity but not running time), or the March 25 issue, in which were reported the results of tests made by the University of Wisconsin on running time of electric refrigerators, but in which no makes were definitely specified.

The specifications issue may be obtained at a cost of 25 cents, the March 25 issue may be had for 10 cents.

An article covering characteristics of the refrigerant Freon was published in the March 21, 1934, issue of ELECTRIC REFRIGERATION NEWS. For further information concerning this refrigerant we suggest you write Kinetic Chemicals, Wilmington, Del., which makes this refrigerant, or to Frigidaire Corp.

A.S.R.E. Address

No. 2850 (Manufacturer, Pennsylvania)—"Please tell me the address of the American Society of Refrigerating Engineers."

Answer: 37 West 39th St., New York, N. Y.

Commercial Case Issue

No. 2851 (Distributor, Arkansas)—"Have you ever considered getting out a special number on commercial display cases and coolers, or do you know of any source where we can get this comparative information on the different makes?"

Answer: Replying to your inquiry concerning a special issue on display cases and coolers giving comparative information, we did try this three or four years ago in the publication "Refrigerated Food News". We found, however, that so few manufacturers had *stock* models of such equipment that it was somewhat futile to try to get up any kind of comparative data.

Specifications of *self-contained* commercial refrigerators, in which the refrigerating unit is an integral part of the unit, were published 'n the May 6 issue of ELECTRIC REFRIGERATION NEWS.

From time to time detailed descriptions of new equipment introduced by the commercial refrigerator manufacturers are published in the NEWS.

Air-Conditioning Firms

No. 2852 (Manufacturer, Ohio)—"No doubt you are familiar with the name of the various concerns in the air-conditioning business, both domestic and commercial.

"We would appreciate having these names and addresses for our files."

Answer: Names of manufacturers of complete equipment and parts can be found on pages 150-164 of the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY.

Leading manufacturers in the field can be determined by referring to the July 29 issue of ELECTRIC REFRIGERATION NEWS, in which manufacturers of both summer and winter systems will present specifications of their equipment.

In the February 5 issue of ELECTRIC REFRIGERATION NEWS, a report was made on the air-conditioning manufacturers exhibiting at the International Heating & Ventilating Exposition in Chicago.

'Thermo Balls'

No. 2853 (Dealer, Pennsylvania)—"Can you tell us who manufactures 'Thermo Balls?' By this we mean metal balls about an inch or so in diameter which are placed in the ice trays of an electric refrigerator and frozen. They are used to cool drinks without diluting the drink."

Answer: Such equipment has been made by Silverice, Inc., 261 Fifth Ave., New York City, and Le Barque Sales, Inc., 1549 E. 65th St., Chicago, Ill.

Industry Statistics

No. 2854 (Advertising Agency, New York)—"We are interested in statistics and estimates concerning the electric refrigerator industry, and wonder if you will be so kind as to give us some information.

"We would like to know the number of electric refrigerators, both domestic and commercial, now in use; the estimated 1936 production; and the estimated production trend by year up to 1940.

"Do you have this information for gas refrigerators?"

Answer: A table was published on page 1 of the Jan. 1, 1936, issue of ELECTRIC REFRIGERATION NEWS showing an estimated 7¼ million electric refrigerators were in use at that time.

Sales figures reported by manufacturers thus far this year indicate that 1936 production will at least reach the anticipated total of 2 million household units. Industry executives predict that yearly sales will probably hold at that level for several years yet to come.

We do not have the sales figures on gas refrigerators.

Number of Manufacturers

No. 2855 (Reader, Illinois)—"I will greatly appreciate your supplying me the number of manufacturers of household electric refrigerators doing business each year from 1930 on up to and including 1936.

"A situation has arisen creating my need for this and I will be greatly aided if you can send me the figures within the next two or three days."

Answer: A hasty survey of our records shows the following figures for the number of household electric refrigerator manufacturers doing business each year from 1930 on up to and including 1936:

1930	42
1931	53
1932	69
1933	57
1934	42
1935	40
1936	40

Wisconsin Tests

No. 2856 (Manufacturer, Ohio)—"In your March 25 issue of the REFRIGERATION NEWS, on page 14, we notice a list of refrigerators that were tested at the University of Wisconsin.

"We would appreciate it if you would tell us if there is a Crosley Radio Corp. refrigerator on this list, and if so, which one."

Answer: See below.

No. 2857 (Engineer, New York)—"In attempting to discover the relative merits on the different refrigerators marketed today, I have been referred to the March 25 issue of ELECTRIC REFRIGERATION NEWS.

"I find that the tests made by the University of Wisconsin are very interesting and hope to be able to realize some practical value from these tests if you will provide me with information as to which refrigerators the various numbers refer."

Answer: We have no official information as to the makes of the refrigerators tested by the Electrical Standards Laboratory of the University of Wisconsin.

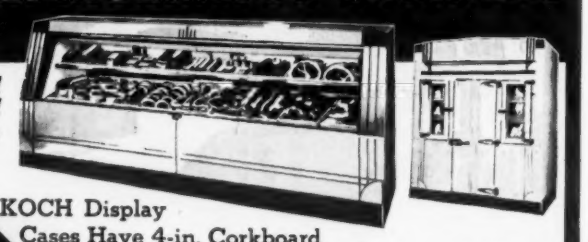
We would suggest that you write Prof. Royce Johnson direct concerning this matter.

The Buyer's Guide

Special rates apply to this column only.
Write Advertising Dept. for full information.

DISTRIBUTORS and SALES AGENTS.... WANTED for KOCH COMMERCIAL REFRIGERATOR CABINETS

Some very good territories still available



KOCH Display Cases Have 4-in. Corkboard Insulation, Triple Plate Glass, and Are Porcelain Clad

Write for full information, stating qualifications

Complete Market Equipment by KOCH

KOCH REFRIGERATORS
North Kansas City, Mo.

TYLER'S NEW WELDED STEEL REFRIGERATOR CASES

At last a general purpose case at a sensible price. Offers every advantage of the most costly cases at tremendous savings. Modern in every detail. Comes equipped with coils. Single and double duty models.

AN AMAZING VALUE

Hundreds in use. Perfect refrigeration for meat, dairy and delicatessen products and all perishables sold in food stores. Write or wire for all the facts.

TYLER Sales-Fixture CO. Dept. E, Niles, Mich.

3 INCH INSULATION—TRIPLE GLASS

THE 3600 LINE—NOTABLE FOR ITS LARGER DISPLAY SPACE!

More square feet of display space than many other cases considerably larger. Three sizes are available—6, 8, and 10 feet long—and you have your choice of Porcelain or DuLux finish

Features include extra large rubber composition doors; extra height doors in storage compartment; full view of illuminated display section; removable intermediate shelf; 3" approved insulation; and three lights of glass.

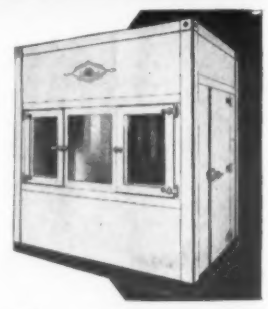
For real convenience, economy, room and accessibility, these cases cannot be equaled.

SOLD ONLY THROUGH DEALERS AND JOBBERS
WRITE FOR COMPLETE CATALOG

GLOEKLER MANUFACTURING COMPANY
429 FOURTH AVENUE, PITTSBURGH, PA.

Complete line of Refrigerators, Display Cases, Store Fixtures. Desirable territory available. Write for particulars.

QUALITY THESCO SINCE 1870



The C. Schmidt Co., Cincinnati

PURO
ELECTRIC WATER COOLERS

Thoroughly reinforced all steel attractively finished cabinets.
Complete line of different Models and Capacities.
Write for details and sales prices.

Puro Filter Corporation of America
440 Lafayette Street, New York City Spring 7-1800

Plenty of Ice Cubes with the "Admiral"—Has "The Leitner System"

This Model Leitner Beer Cooler includes "The Leitner System", the beer coils, and a 144 Unit Ice Cube Maker—all sizes—also 2 Other Models—The "Captain"—standard all steel coil box and The "Commodore"—complete "Package" Unit—both with "The Leitner System" and beer coils installed in the Cooler. Dealers and Distributors wanted for "The Leitner System".

Send for Literature and Prices

Write To-day

M. LEITNER & CO.
Leading Manufacturers and Distributors Since 1906
2322 OGDEN AVENUE
CHICAGO, ILL.

THE NEWSPAPER OF THE INDUSTRY

ELECTRIC REFRIGERATION NEWS

WRITTEN TO BE READ ON ARRIVAL

Registered U. S. Patent Office

ESTABLISHED 1926. MEMBER AUDIT BUREAU OF CIRCULATIONS. MEMBER ASSOCIATED BUSINESS PAPERS.

VOL. 18, NO. 13, SERIAL NO. 384
ISSUED EVERY WEDNESDAY

Entered as second-class matter Aug. 1, 1927

DETROIT, MICHIGAN, JULY 29, 1936

Copyright, 1936, by Business News Pub. Co.

SPECIFICATIONS ISSUE
25 CENTS PER COPY

Ohio Appliance Dealers to Use Law to Clean Up Price Slashing

Fair Trade Act Aims to Set Up Minimum Resale Prices

CLEVELAND—Failure of non-cooperating distributors to comply with the Ohio Fair Trade Act recently passed to maintain resale prices will bring retaliatory measures by members of the newly organized Cleveland Retail Appliance Dealers Association, it was tentatively decided at the first meeting of that organization.

In such cases, the dealers agreed, they will confine their sales to one cooperating manufacturer of each appliance handled.

The Ohio Fair Trade Act, which became a law July 8, maintains that a minimum resale price is established on any branded item if that item becomes the subject of a contract between a distributor or manufacturer and a retail outlet. One such contract is binding on all members.

The new law was originally sponsored by the organized druggists of the state for the purpose of eliminating price cutting on advertised brands. With the passing of the act, their association immediately put on record the list prices of 37 manufacturers or distributors.

Faced by the belief of many members that a court will find the act unworkable because there is no state enforcement, and because one contract, no matter with whom it is made, constitutes the establishment of a minimum price, the appliance retailers will still strive to make use of it to clean up what they call chaotic appliance merchandising conditions here.

Ohio Council of Retail Merchants has met the problem by appointing J. C. Lucas, formerly a retailer, to study and keep in touch with the situation. Similarly, the Retail Merchants Board of Cleveland has arranged for a large open meeting to which all retailers, wholesalers, manufacturers are being invited. At this meeting, which will be held July 27 in the Chamber of Commerce Club, Mr. Lucas will speak.

The dealers' association, with a membership of approximately 150 to 175 of the 200 dealers in this terri-

(Concluded on Page 2, Column 4)

New Quarters Opened By Franklin Slagel In Los Angles

LOS ANGELES—Franklin G. Slagel Co. recently celebrated with a formal opening the completion of what it claims to be the largest and best equipped headquarters for refrigeration and air-conditioning equipment and parts in the United States. The new establishment is located at 1501-1509 W. Eighth St.

Included in the 18,000 sq. ft. of floor area are modern show rooms, the engineering department, advertising and mailing division, accounting department, large stock room, and completely equipped shop available to distributors and service organizations for repairs, reconditioning, and plating.

Functioning as manufacturers' representatives, the company is providing factory branch facilities for manufacturers of refrigeration and air-conditioning equipment and supplies.

Present territory served by the Slagel Co. includes the principal cities in California, Washington, Oregon, Idaho, Nevada, Arizona, and Utah.

Included in accounts now handled are products of the Fedders Mfg. Co., Brunner Mfg. Co., Automatic Reclosing Circuit Breaker Co. (Ranco); United States Air Conditioning Corp., Electrimatic Corp., Day & Night Water Heater Co., United Wire & Supply Corp., Johnson Motor Co., Commonwealth Brass Corp., and Clifford Mfg. Co.

Free Inspection to be Feature of Warm Air Heating Week

CHICAGO—Free inspection of more than 5,000,000 heating plants throughout the United States, and an educational program on the part of manufacturers, dealers, and contractors will mark the National Warm Air Heating and Air Conditioning Week to be held Aug. 17-22.

In the check-up it is expected that the 15,000 dealers working in cooperation with the heating and conditioning manufacturers will make a number of minor repairs to reduce the fire hazard and the property loss, and will show the home owner how his present heating system may be converted into a complete or partial air-conditioning system, declares Mat H. Friedman, director of the campaign.

Educational activities will aim at

(Concluded on Page 15, Column 2)

Office Conditioning Sales Gain During June in Chicago

CHICAGO—Among the 63 air-conditioning installations sold in Chicago during June, private offices gained sudden recognition by capture of first place in the list with 20 installations, reports compiled by the Commonwealth Edison Co. show.

Restaurants also took a place of importance in the list with 14 installations, and following them were stores, 10; general offices, seven; drug stores, four; hotels, four; theaters, three; residences, two; bank, one; industrial, one; dentist, one; and an athletic club, one.

Pixley & Ehlers, restaurant, accounted for the largest installation with a 100-ton installation; another restaurant, Ontra Cafeteria, was next with 75 tons; a clothing store, Lane Bryant, followed with 55 tons; and the Mercantile Trust & Savings Bank was fourth with 45 tons.

Of the stores conditioned, five were clothing stores, and of these, two had the show room only conditioned, and one just the fitting room. Food, fur, jewelry, lamps, and china were the products sold by the other five stores.

An office-sized conditioner of ½ hp. was taken by the Midwestern Athletic Club for its card room. Another interesting installation was the 30-ton, 50½-hp. industrial job put in for Case Moody Pie Co.

Louisville Hotel Opens Air-Conditioned Guest Rooms

LOUISVILLE, Ky., July 28—Joining the rapidly growing list of American hostelries that have been swinging to air-conditioned guest rooms, Kentucky hotel in this city, this week announced its entrance into this new field of guest appeal.

Being one of the largest hotels in the south, with 450 rooms, the Kentucky starts with one section of its building equipped with the necessary apparatus to keep sleepers cool and comfortable throughout the night, regardless of how hot or sultry the outside may be. Announcement that the hotel is now ready to offer this service was made by Samuel S. Friedman, managing director.

"Our installations are rather unique," declared Mr. Friedman, "in that there was no tearing up necessary to place

(Concluded on Page 15, Column 4)

Two New Distributors Are Appointed by Servel

EVANSVILLE, Ind.—Home Electric Appliance Co. of Nitro, W. Va., and Bewley Fixture Co. in Tulsa, Okla., were recently appointed distributors for Servel, Inc.

The fixture company has just moved into a new office and warehouse building to increase its sales activities.

Kelvinator Adds Electric Ironer & Washer Lines

McIntyre to Direct Sales Of New Products; Miles Made Range Chief

DETROIT—Two new departments recently have been organized at Kelvinator Corp. as the result of the addition of an electric washer and electric ironer to its line of household appliances, and the creation of a separate division for electric ranges, reports H. W. Burritt, vice president in charge of sales.

P. L. Miles, former sales manager of the range division for the Edison General Electric Appliance Co., manufacturer of the Hotpoint range, will head Kelvinator's new range division.

V. J. McIntyre, formerly Kelvinator domestic sales manager, will direct the merchandising of the washer and ironer for the entire country.

Filling the place vacated by Mr. McIntyre will be M. S. Bandoli, district manager for Kelvinator in Texas.

The addition of the two new appliances will aid in balancing the production and sales department schedules, Mr. Burritt believes.

Kelvinator Profit Totals $893,397 for Quarter

DETROIT—Following a director's meeting July 23 at which a 12½ cent dividend was declared, Kelvinator Corp. reported a net profit of $893,397, after all charges and reserves for federal taxes, for the quarter ending June 30.

For the same quarter of the previous year, a net profit of $711,608 was reported. For the nine months of the current fiscal year net earnings were $1,372,883, compared to the $778,583 reported for the corresponding period ending June 30, 1935.

The surtax on undistributed income does not apply to the present fiscal year, which ends Sept. 30, 1936, Kelvinator officials said.

The dividend of 12½ cents per share is payable in cash on Oct. 1 to stockholders of record at the close of business on Sept. 5, 1936.

Halla to Manage Omaha Fixture & Supply Co.

OMAHA—S. E. Halla, formerly with the Harold L. Schaefer Co. in Minneapolis, was recently appointed manager of the commercial refrigeration and air-conditioning department of the Omaha Fixture & Supply Co., manufacturer and distributor, 1101 Douglas St. here.

The company has manufactured commercial refrigerator walk-in boxes, cases, counters, and similar equipment for a number of years, and now acts as distributor for Curtis compressors, Krackowizer coils, and Schaefer ice cream cabinets.

Household Sales Hit All-Time High for June; 6 Month's Total Over 1 1-2 Millon Mark

* * *

2,212 Refrigerators Sold During June In Kansas City

KANSAS CITY—Household electric refrigerator sales here totaled 2,212 units during the month of June, a 22% increase over the 1,819 total in June, 1935, reports G. W. Weston, secretary-manager of the Electric & Radio Association of Kansas City.

Sales for the first six months of the year amounted to 12,220 units, as compared with 11,897 for the first half of 1935, or a 2½% increase.

Hot, dry July weather is promoting sales, Mr. Weston says, so that a still further gain over last year is expected.

Birmingham Sales in Five-Month Period Total 3,105 Units

BIRMINGHAM, Ala.—With sales of 3,105 electric refrigerators recorded during the first five months of 1936, Birmingham dealers have sold more units at a slightly higher unit price than were sold during a corresponding period in 1935 when 3,029 boxes were sold, reports the Birmingham Electric Co.

Slackening down of chest model sales is believed to be partly responsible for the gain in unit price, since only 182 "Lift-top" refrigerators have been sold by the utility during this five-month period this year, where last years total "Lift-top" sales was 574 units. Present plan of the utility is gradually to discontinue the sale of chest models, which will leave the entire merchandising of electric refrigerators in the territory to retail dealers.

From present indications, Birmingham electric dealers will more than better their last year's sales which represented a 400% increase over those of 1934.

Perfection Adds Line of Valves and Fittings

HARVEY, Ill.—A complete line of refrigeration valves and fittings has recently been introduced by the Perfection Refrigeration Parts Co. here, manufacturer of refrigeration parts.

Perfection valve bodies are made of forged brass having grain structure that prevents seepage of refrigerant. Stems are corrosion-proof. Fittings are uniform in diameter, threads are accurately cut, and are carefully protected by cardboard sleeves when packed in cartons, company officials declare.

253,600 Household Units Shipped; Commercial Total Is 28,543 Condensing Units

DETROIT—June world sales of 253,600 household electric refrigerators by manufacturers to distributing outlets, as estimated by ELECTRIC REFRIGERATION NEWS, cracks all previously established records for the month (previous record was 208,700 units in June, 1933) and represents an increase of 45% over the 174,800 units sold in June, 1935.

The June sales record sent the total for the first six months to 1,516,600 units, the first time the industry has ever passed the million-and-a-half mark in six months of activity. For the first six months last year the total was 1,178,000.

If sales in the last half of 1936 are only as good as they were in the last half of 1935 industry sales will go over the two million mark, the figure which leading sales executives predicted would be reached this year. If the rate of increase over 1935 is maintained at the same pace that held in the first six months sales may reach the 2¼ million mark.

Household electric refrigerator sales reported by 15 member companies of the Household Refrigeration Section of the Refrigeration Division of National Electrical Manufacturers Association (Nema) totaled 235,853 units, as compared with 159,127 units in June, 1935.

World sales of commercial refrigerating machines reported by 15 member companies of the Commercial Refrigeration Section of the Refrigeration Division of Nema in June amounted to 28,543 machines, the second highest total recorded for any month in the industry's history. The highest month recorded was in May of this year.

In the commercial section self-contained bottled beverage coolers again were a standout, with nearly 5,500 units reported sold. Ice cream cabinets and water coolers also showed up well, and self-contained air conditioners reached a total of 1,659 units for the month.

For a complete tabulation of the sales reported by the Nema member companies see page 30.

G-E Distributors at Merchandising Camp

ASSOCIATION ISLAND, Lake Ontario. — "Camp Merchandising," the four-day summer sales conference held each year by the General Electric Co., opened Sunday at company-owned Association Island, which is located in the crook of Lake Ontario and St. Lawrence River. Attended by company officials and heads of the G-E appliance and merchandise department, and by distributors of G-E appliances, the conference will close Wednesday following the day's discussion of advertising and its application.

Gerard Swope, president of the General Electric Co., spoke on the opening day's program, as did Charles W. Wilson, vice president and manager of the appliance department, P. B. Zimmerman, sales manager of the department, J. W. McIver and W. D. Yates.

Speakers on the second day's program were A. M. Sweeney, sales manager of the specialty appliance sales division, D. C. Spooner, who spoke on laundry equipment, R. J. Cordiner, on radio, and R. W. Turnbull, on small traffic appliances.

Others who made short presentations on the second day included George Kobick, on the all-electric kitchen; C. H. Enderle, dishwashers; M. T. Bard, on the Disposall; A. L. Scaife, advertising and sales promotion; J. R. Poteat, ranges; H. H. Bosworth, central station activity; Fielding Chandler, dealer sales; W.

(Concluded on Page 2, Column 5)

All 30 Apartments in London Building Are Completely Air Conditioned

By George F. Taubeneck

LONDON, July 24—First completely air-conditioned apartment house in England opened to renters here today. It is the Eaton House, located not far from Buckingham Palace, and each of its 30 apartments has a separate air-conditioning installation made by York.

Under the direction of J. B. Farish, manager of York Shipley, Ltd., London, a 3-hp. York compressor has been installed just outside each apartment, in a central courtway which exposes a small patch of ground to the sky.

The cooling unit of each installation is located in the kitchen, well-concealed, as are the controls and the remainder of the conditioning apparatus. Heat is supplied by a central hot water system, piped directly to the conditioning coils in each apartment.

Vents through which this conditioned air is circulated have been placed unobtrusively in the walls of each room except the kitchen and bathroom (which are on a separate, non-conditioned, central circulation circuit).

Counting the maid's quarters, each apartment has four air-conditioned rooms. Annual rentals range from 450 pounds ($2,250) to 1,000 pounds $5,000). A small Frigidaire household refrigerator will be installed in every kitchen.

Feature of the installation in each apartment, from the standpoint of promotion, is a switch. If you want it colder, you flip it one way. If you want it warmer, you flip it another.

(Concluded on Page 15, Column 3)

SPECIFICATIONS OF AIR CONDITIONERS IN THIS ISSUE

Cooper Holds Series Of Cooking Schools

CHICAGO—The wholesale division of R. Cooper, Jr., Inc., General Electric distributor, has successfully promoted the idea of the all-electric kitchen through a series of one- and two-day cooking schools in this territory, under the direction of Mrs. Adelaide Fellows, Cooper home economist.

As outlined by F. A. Ramsdell of the Cooper new construction bureau, procedure of a typical two-day school —the one-day affairs were similar, but in contracted form—was as follows:

First day's activity opened with an 8:30 a.m. sales meeting for all salesmen, supervisors, and the district manager, at which the whole program was definitely outlined and duties assigned each person.

Program for Public Session

Public sessions began in the afternoon, with Mrs. Fellows giving a demonstration, then a talk on "The Art of Living Electrically." A prize drawing followed, with local utility representatives acting as judges.

The usual cooking and American Kitchen demonstrations were given by a radio skit which employed the idea of an inquiring reporter traveling through the audience with the microphone, patterned after "The Man on the Street" and "Vox Pop" programs.

The appeal of electric cookery and the dishwasher were injected into the "broadcasts," and an attempt made to direct questions with the local situation in mind.

'Birthday Party' Follows

Then followed a "birthday party," with the president of one of the local women's clubs officiating. "Wishing boxes" were used—two gift boxes tied with ribbons, at either end of the platform. Winners, determined by drawing numbers corresponding to those on registration cards filled out by the women present, received a credit of $10 on the purchase of a refrigerator, range, or other appliance.

At one school where attendance was about 300 people, about 80 refrigerator prospects and 50 range and dishwasher prospects were obtained, Mr. Ramsdell reports. At another, with an attendance of about 250, more than 50 refrigerator and 60 range and dishwasher prospects were secured.

Rate of sales following the schools, Mr. Ramsdell says, was a range and a refrigerator each day for the first week, in territory where the volume of business had previously been unsatisfactory.

G-E Equipment Used In Jewish School In Kansas City

KANSAS CITY, Mo.—Kansas City's first Jewish cooking school, sponsored by *Kansas City Jewish Chronicle*, a weekly newspaper, drew 2,200 Jewish women during the four days of its sessions, and resulted in 1,800 prospect names for General Electric Supply Corp., which furnished the complete kitchen ensemble for the show.

Miss Clara Dean of General Electric's Nela Park kitchen staff conducted the sessions, which prominent Jewish clubwomen in the city joined the *Chronicle* in promoting.

Interest aroused by the school, according to R. I. Seymour, sales promotion manager of the distributor, was largely responsible for making March the biggest refrigerator month in the history of its business.

Several food and utensil manufacturers, stores, and shops, in addition to G-E Supply Corp., cooperated with the newspaper in presenting the school. A fashion show sponsored by a local dress shop was an added attraction.

In her presentations, Miss Dean made no attempt to teach kosher cooking, but all of her recipes and menus were such that they could be accepted by housewives who adhered to the Jewish dietary laws in their cooking.

Each day the *Chronicle* distributed folders containing the recipes to be demonstrated, so that housewives attending might have a permanent record of them. Another school is being planned for next year.

Peddler Ordinance Upheld by Court In Wyoming

CHEYENNE, Wyo.—Significant to electric refrigeration distributors and dealers is the decision of the Wyoming Supreme Court in sustaining the Green River anti-peddler ordinance, and declaring illegal a sales plan which would largely have nullified the effect of the measure.

Apparently merchants in any community may ask their city council for an anti-peddler ordinance which will completely suppress itinerant salesmen, without interfering with their own outside selling activities.

Refrigerator dealers and other merchants who maintain outside sales crews are not hampered by the ordinance. Authorities have ruled that it applies only to firms which do not have a taxable stock of goods in the city.

'Commits a Nuisance'

The Green River ordinance declares that any person who, uninvited, enters private property for the purpose of soliciting orders commits a nuisance, punishable by a fine of $25 to $100.

The United States Court of Appeals sustained the ordinance. Fuller Brush Co. then sent a salesman from house to house in Green River, explaining that, under the ordinance, he could not solicit orders uninvited, but adding that if the housewife would sign an invitation card he would give her a free brush.

Green River challenged the practice. The district court ruled it illegal, as did the Wyoming Supreme Court.

Cheyenne and various other communities have followed Green River with anti-peddler ordinances. The Cheyenne measure has been in effect for more than two years. With it authorities have effectively kept the city free of itinerant salesmen.

Most salesmen, warned, leave town at once. Only a handful of cases have been carried to police court.

Cleveland Appliance Dealers Plan to Use Ohio Price Law

(*Concluded from Page 1, Column 1*)

tory, is hoping for a united stand of both the distributor and the dealer, reports George W. Walker, secretary of the organization.

Their protest is against the 10 to 20% markups which have brought appliance selling to the point where the customer "propositions" the dealer on price. If the low markups now prevalent continue to prevail, the members say, manufacturers will take them for granted and base their list prices accordingly.

A return to the full markup, manufactures and distributors are told, might also permit the return to the strictly retail advertising basis, where the dealer could do all his own advertising and display without grants from the jobbers.

Meanwhile, although one meeting of jobbers was called by a local attorney for the purpose of stabilizing the industry through the Fair Trade Act, nothing has been done since then. Dealers say that jobbers are ready to spend $50,000 to bring about price stabilization through such an organization.

At that meeting it was decided to have the attorney prepare a suitable price contract form to present to jobbers. One large manufacturer claims to have drafted such a contract for its own use but that its attorneys will take from a week to ten days to pass on it. Other manufacturers and distributors have given indifferent answers when questioned as to their reactions to such contracts.

Although the dealers claim that similar laws are being passed in 12 states, distributors and a few large retailers remind them of the failure of the price maintenance law in New York and the apparent ineffectuality of the California law.

Denouncing the department store appliance departments' special sales and trading stamps as being responsible for their resorting to "chiseling," the small dealers accuse the downtown stores of being responsible for the current situation.

Although it had not yet been determined whether department stores will be invited to join the association, their buyers or merchandise men were invited to a special meeting of the group to hear the aims of the organization.

Of the 17 directors of the dealers' organization, 15 own their own business.

Bough & Smith to Direct Emerson Sales

ST. LOUIS—Announcement of the appointment of Lester F. Bough as vice president in charge of motor sales, and of Oscar C. Smith as vice president in charge of fan sales and advertising was recently made by Emerson Electric Mfg. Co.

Distributors Attend G-E Sessions

(*Concluded from Page 1, Column 5*)

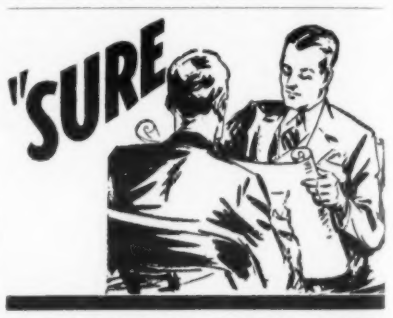
D. Galpin, retail sales; W. E. Landmesser, commercial refrigeration, and H. C. Mealey, Hotpoint refrigerators.

Opening Tuesday's session, the "New American Home" activity was discussed by C. M. Snyder. Following this group meetings were held at which speakers and subjects were A. C. Pierce and R. C. Cameron, department store operations; D. C. Spooner, J. M. Wicht and A. L. Atkinson, washers and vacuum cleaners; R. J. Coriner, E. H. Vogel, W. R. G. Baker, C. T. Wandres and P. F. Handlock, radio sales, advertising, manufacturing and design.

T. K. Quinn, president, Maxon, Inc., advertising counsellors, spoke first on Wednesday's program.

Group discussions were headed by R. W. Turnbull, C. J. Hendon, R. J. Heaney and J. P. Rainbault, who covered heating devices, fans, clocks, sunlamps and miscellaneous small appliances. J. H. Crawford, H. G. Knoderer, L. F. Giblin, A. E. Newman, J. C. Dallam, F. A. Parnell, K. W. Nelson, C. K. Mead and M. H. Owen, spoke on modern wiring, cooperative field work, conduct and wire products, wiring devices, advertising and sales promotion, rectifiers and automotive products, and asbestos products.

Closing ceremonies of the camp will be in charge of vice president C. E. Wilson and J. W. McIver.



I CAN DO THE JOB

My U. E. I. Training Taught Me How"

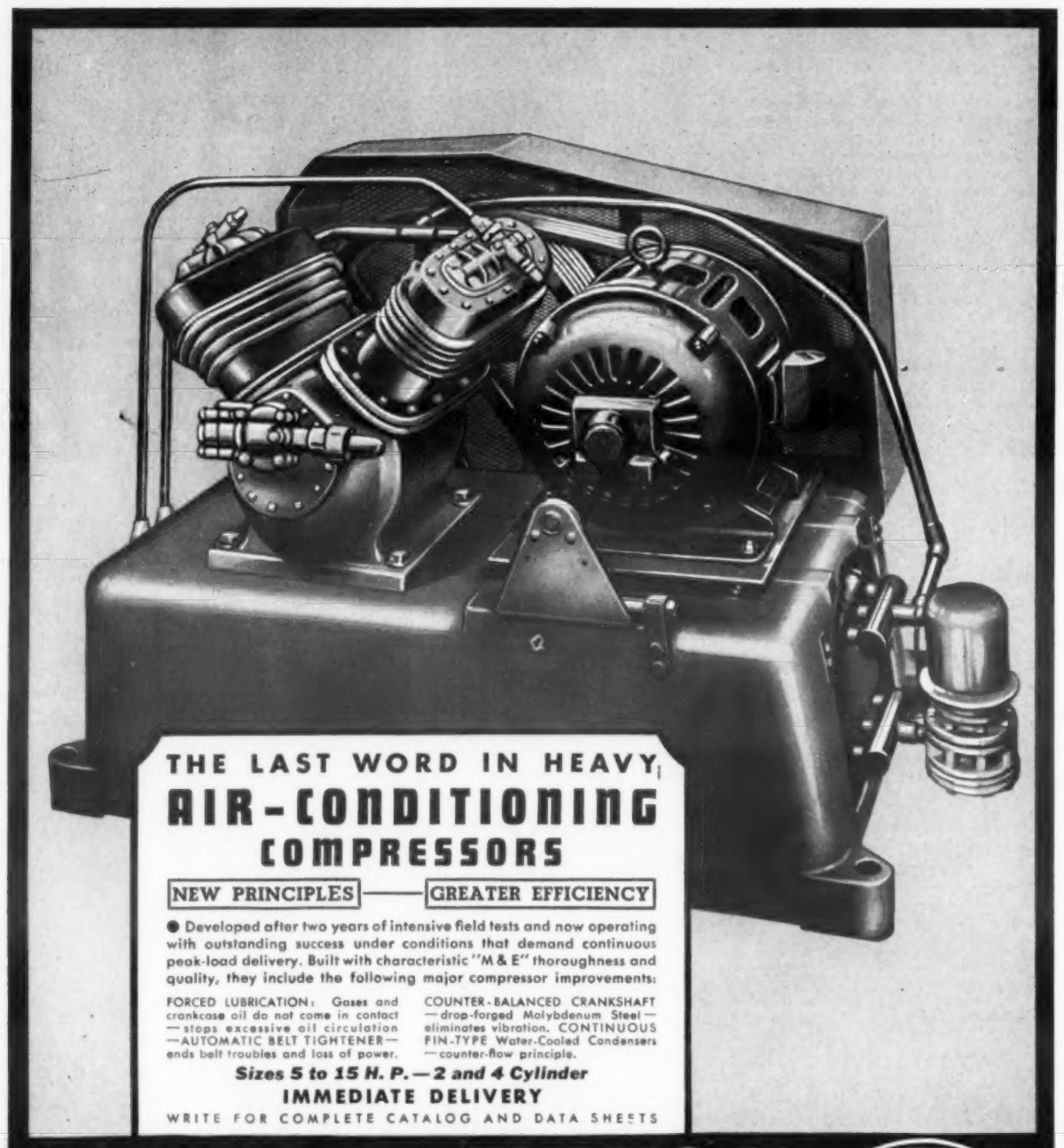
The U. E. I. courses of training in Electric Refrigeration and Air Conditioning were prepared with the cooperation of leading manufacturers. As a result, U. E. I. Trained Men are able to make good in almost any phase of Electric Refrigeration and Air Conditioning work right from the start.

If You Need a Trained Refrigeration Man

call on the U. E. I. FREE Placement Bureau. Among the graduates of this School we have trained and competent Shop Mechanics, efficient Installation and Service Men and capable Sales Engineers available in almost every locality. Many already have practical working experience.

Save time, trouble and money by using this Placement Service when adding to your force or making a replacement. No charge to you or to prospective employee. Write, 'phone or wire for quick, courteous, efficient service.

UTILITIES ENGINEERING INSTITUTE
404 N. Wells St. *Established 1927* Chicago, Illinois
17 West 60th St. New York, N.Y.



THE LAST WORD IN HEAVY
AIR-CONDITIONING COMPRESSORS

NEW PRINCIPLES —— GREATER EFFICIENCY

● Developed after two years of intensive field tests and now operating with outstanding success under conditions that demand continuous peak-load delivery. Built with characteristic "M & E" thoroughness and quality, they include the following major compressor improvements:

FORCED LUBRICATION: Gases and crankcase oil do not come in contact —stops excessive oil circulation —AUTOMATIC BELT TIGHTENER— ends belt troubles and loss of power.

COUNTER-BALANCED CRANKSHAFT —drop-forged Molybdenum Steel— eliminates vibration. CONTINUOUS FIN-TYPE Water-Cooled Condensers —counter-flow principle.

Sizes 5 to 15 H. P.—2 and 4 Cylinder

IMMEDIATE DELIVERY

WRITE FOR COMPLETE CATALOG AND DATA SHEETS

MERCHANT & EVANS CO
MANUFACTURERS
PHILADELPHIA
Plant: LANCASTER, PA.

M&E EST. 1866

Mueller Brass Co. Improved Liquid Line Strainer

Liquid Line Strainer

This liquid line filter is furnished with bronze screen and asbestos filter bag assembly ready to install in liquid line.

This design permits a greater screen area than ordinary line strainers or filters and combines with it, the excellent filtering properties of asbestos cloth.

It effectively collects and localizes such foreign matter as copper sawdust, chips, scale, core sand, litharge, or particles of dehydrating materials.

Mueller Brass Co. liquid line filters are furnished in the following sizes:

A-13334	¼" Flare x ¼" M.P.T. Inlet
A-13470	¼" Flare x ¼" Flare
A-13549	⅜" Female Pipe Inlet x ⅜" F.P.T. Outlet
A-13536	⅜" Flare Inlet x ⅜" Flare Outlet
A-13544	¼" F.P.T. Inlet x ¼" Flare Outlet
A-13545	¼" M.P.T. Inlet x ⅜" Flare Outlet
A-13546	½" Flare Inlet x ½" Flare Outlet
A-13547	¼" M.P.T. Inlet x ½" F.P.T. Outlet
A-13548	¼" M.P.T. Inlet x ¼" Female Pipe

Replacement unit for Liquid Line Strainer

Extra units consisting of screen, asbestos filter bag, retainer and gasket are furnished separately for replacement purposes.

The Mueller Brass Co. manufactures a complete line of valves, fittings and accessories for mechanical refrigeration and air conditioning purposes. Write for Catalog R-3 or illustrated price list No. 2002.

MUELLER BRASS CO.
Port Huron, Michigan

FRANKLIN G. SLAGEL CO.

MANUFACTURERS' REPRESENTATIVES HANDLING REFRIGERATION AND AIR CONDITIONING EQUIPMENT AND SUPPLIES, REFRIGERANTS, OILS, PLUMBING AND METAL PRODUCTS

One view of the spacious display room.

Adequate display for manufacturers' products.

Ample office personnel assures efficient operation.

Another view of the complete office facilities.

The Sales Manager's Office is equipped for business.

The Office Manager plans the work and works the plan.

1501-1509 W. EIGHTH STREET, LOS ANGELES

●

Announces

the Opening of its

NEW MODERN BUILDING

●

Offering Complete Sales, Engineering, Warehouse and Shop Facilities

SERVING MANUFACTURERS AND JOBBERS THROUGHOUT THE PACIFIC COAST STATES

●

TO provide Pacific Coast representation on a par with factory branch facilities for manufacturers of electric refrigeration, air conditioning and allied lines of equipment and parts, the Franklin G. Slagel Company announces the opening of its new and modern building. Over 18,000 square feet of floor area is completely equipped for display, engineering, advertising, stocking, accounting, repairing and reconditioning.

The personnel of this organization has an established record of intelligent, experienced service to manufacturers, jobbers and distributors throughout California, Washington, Oregon, Idaho, Nevada, Arizona, and Utah.

The Franklin G. Slagel Company Represents the Following Distinguished List of Manufacturers

FEDDERS MANUFACTURING CO.
Refrigeration, Air Conditioning Products

RANCO, COLUMBUS, OHIO
Commercial and Domestic Refrigeration Controls

ELECTRIMATIC CORPORATION
Solenoid and Water Control Valves

UNITED WIRE & SUPPLY CORP.
Copper and Aluminum Tubing, Copper Fittings, Brass and Copper Metal Products

COMMONWEALTH BRASS CORP.
Quality Brass Fittings

BOHN ALUMINUM & BRASS CORP.
Quality Brass Valves

BRUNNER MANUFACTURING CO.
Commercial Compressors and Highsides
Dual Air Conditioning Highsides

UNITED STATES AIR CONDITIONING CORP.
Air Conditioning Equipment

DAY & NIGHT WATER HEATER COMPANY
Water Cooling Units, Multiple and Self-Contained

JOHNSON MOTOR COMPANY
Domestic Compressors & Complete Highsides

KUHNE-LIBBY COMPANY
Russian Refrigeration Oils

CLIFFORD MANUFACTURING CO.
Hydron Bellows

The personnel and facilities of the Franklin G. Slagel Company are open to additional non-conflicting accounts. Write for detailed information covering facilities, service and personnel.

The door is always open to the President's Office.

Engineering conference room where problems are thrashed out.

Sales Promotion Department is completely equipped.

One section of large, well arranged stock room.

Another view of the large stock room.

Complete shop facilities for expert repair and reconditioning service to the trade.

In equipment, as in man power, the Franklin G. Slagel Company is set up to increase sales throughout the Pacific Coast territory. It is a tribute to the business axiom that good business is built on good service...now and in the years to come.

AIR CONDITIONING SPECIFICATIONS

Specifications of year-'round air conditioners and air-conditioning equipment which provides the cooling function are published on pages 4, 6, 8, 10, 12, 14, 16, 20, 22, and 24.

Starting on page 24 and continued on pages 26 and 28 appear specifications of winter air conditioners and humidifiers. An explanation of these specifications is given on page 24.

Manufacturers of year-'round and summer air conditioners were asked to supply data by four different classes of equipment (it was required that all equipment have a cooling function): (1) Self-contained floor-type air conditioning cabinets, with compressor installed in the base by the manufacturer; (2) Remote floor-type air-conditioning cabinets, for remote installation of compressor; (3) Suspended-type air conditioners for wall or ceiling, for remote installation of compressor; (4) Duct-type air-conditioning units, from which conditioned air is distributed through ducts.

For self-contained conditioners, data is given on the compressor and condensing unit, while refrigeration capacity with cold water is given in place of the compressor data on other types. There are a few exceptions to this and these are shown by the heads over the data columns.

Capacities for the various functions are given on the basis of rating methods approved last year by trade associations and engineering societies.

Cooling capacity of the units, unless otherwise specified, is given in B.t.u.'s per hour with entering air at 80° F. dry bulb and 50% relative humidity, and with a saturated refrigerant temperature of 40° F. at the outlet of the evaporator for direct expansion systems; and an entering water temperature of 40° F., with 10° rise for cold water systems.

Heating capacity is given in B.t.u.'s per hour with a 2-lb. steam supply, and the entering air at 70° F. (dry bulb).

Capacity of the humidifier is given in pounds of water per hour, with entering air at 70° F. and 30% relative humidity.

Where manufacturers use some other set of conditions for rating their units, such exceptions are noted with an asterisk (*), dagger (†), or some such marking.

Prices given are list f.o.b. factory unless otherwise specified.

Blower capacity is given in cubic feet per minute, and the air velocity through the outlet grille is in feet per minute.

Power input is given in terms of watthours. It should be noted that the power inputs for the condensing unit, and for the blower, are given individually.

Carrier Corp., Airtemp, Inc. (Chrysler), Standard Air Conditioning, Inc., and Young Radiator Co. all expressed a desire and willingness to cooperate in supplying specifications data, but either because they were not ready to release information on their current models, or because they could not get the data together in time, their specifications are missing from this compilation.

It is expected that when these firms are ready to release details of their equipment their specifications will appear in ELECTRIC REFRIGERATION NEWS.

Index of Year 'Round And Summer Units

Index to the specifications of year-'round and summer air conditioners is as follows:

American Blower 4
Baker 4
Buffalo Forge 6
Carbondale 6
Clarage 6
Conditionaire 6
Corozone 8
Crosley 8
Curtis 8
De La Vergne 10
Delco-Frigidaire 8
Electrol 10
Fairbanks-Morse 10
Fedders 12
General Electric 10
Ilg 12
Kauffman 12
Kelvinator 14
Lipman 16
McCord 14
McQuay 14
Miller 16
Nelson 12
Norge 16
Peerless 16
Servel 20
Strang 16
Sturtevant 20
Synchromatic 20
Thermal Units 20
Trane 22
Westinghouse 22
Willard 24
Williams 24
Zephyr Air 20

Winter Conditioners

Specifications of winter air conditioners appear as follows:

Air-Pak (Air Controls) 24
American Air Furnace 24
Burnham 24
Corozone 24
Electrol 24
Fox 26
General Electric 26
Lennox 26
Herman Nelson 26
Norge 26
Rega 26
Rudy 26
Savage Arms 28
Schwitzer-Cummins 28
Thermal Units 28
Gar Wood 28

Humidifiers

Specifications of three lines of humidifiers appear on:

Corozone 28
Hexcel 28
Kleen-Aire (Continental) 28

SPECIFICATIONS OF "YEAR-ROUND" AND "SUMMER-ONLY" EQUIPMENT

American Blower

American Blower Corp., Detroit, Mich.

Functions—Remote floor type: heating, cooling, dehumidifying, and cleaning. Suspended or duct and duct types: heating, cooling, humidifying, dehumidifying, and cleaning.

Cabinet—Remote floor type: air-insulated steel cabinet, grained natural walnut finish. Suspended and duct type: American Blower Corp. insulated pressed-wood cabinet, derby green finish. Duct type: RH series—steel cabinet, beige synthetic enamel finish, not insulated; K series—steel cabinet, prime coat finish, insulation optional; R series—floor-type steel cabinet, beige lacquer finish, not insulated.

Blower—American Blower Corp. Sirocco fans. General Electric motor, direct-connected on remote floor type, V-belt drive on all others.

Air Circulation—Remote floor type: air intake in top, discharge in top; no fresh air intake, Sirocco discharge grille. Suspended or duct type: air intake in bottom side, discharge in top; no fresh air intake; no discharge grilles. Duct type: series RH—air intake in rear, discharge in front, fresh air intake in combined fresh air and return air duct; series K—air intake in rear, discharge in top, fresh air intake provided; series R—air intake in top, discharge in top, fresh air intake provided.

Cooling System—Either direct expansion or circulating cold water on all models. Aerofin tin-dipped copper cooling coils.

Heating System—Aerofin tin-dipped copper coils, can be used with hot water. Heating capacities: model O-45, 14,000 B.t.u.; O-60, 28,000; O-75, 42,000; RH112M11DS, 62,000; RH112H-11DS, 76,500; RH112M14DS, 90,500; RH112H14DS, 107,000; RH212M11DS, 115,000; RH212M14DS, 177,000; RH212-H11DS, 130,000; RH212H14DS, 210,000; R-35, 99,000; R-50, 146,000; R-75, 205,000; R-90, 276,000.

Type of Humidifier — American Blower Corp. spray type.

Air Cleaning Medium—Remote floor type: bronze-wool filter. Suspended or duct and duct types: Arco filters.

Controls—Remote floor type: water-regulating valve. Suspended or duct type: air by-pass dampers. Duct type: series K—air by-pass dampers.

Remote Floor Type

Model	No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circ. G.p.m.	Pressure Drop Lb/sq. in.	Humidification* Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
O-45	.....	$.....	....	....	24,750†	7,090	10,800	...	...	16,200†	6,725	16,200	2.75	5.5	0	185	...	30 x 34 x 10½	1/40	1,140	4½	300	...	...
O-60	.....	.....	....	....	47,200†	13,820	20,900	...	...	32,400†	13,450	18,170	5.5	5.0	0	295	...	34 x 42 x 14	1/20	870	6	600	...	...
O-75	.....	.....	....	....	74,700†	22,600	33,800	...	...	47,500†	20,980	28,120	9.2	3.0	0	465	...	38 x 48 x 18	1/20	700	7½	1,000	...	...
Suspended or Duct Type																								
B-112	.....	$.....	226	Varies	....	....	....	...	...	....	....	....	...	...	..	‡	...	88 x 36 x 36	¾	1,750	12	1,700	...	...
B-212	.....	.....	388	Varies	....	....	....	...	...	....	....	....	...	...	..	‡	...	88 x 64 x 36	1½	1,750	12	3,400	...	...
B-312	.....	.....	604	Varies	....	....	....	...	...	....	....	....	...	...	..	‡	...	88 x 96 x 36	2	1,750	12	5,700	...	...
B-215	.....	.....	732	Varies	....	....	....	...	...	....	....	....	...	...	..	‡	...	88 x 80 x 49	2	1,750	15	6,200	...	...
B-218	.....	.....	996	Varies	....	....	....	...	...	....	....	....	...	...	..	‡	...	93 x 100 x 49	3	1,750	18	8,100	...	...
B-221	.....	.....	1,320	Varies	....	....	....	...	...	....	....	....	...	...	..	‡	...	108 x 120 x 49	3	1,750	21	10,000	...	...
Duct Type																								
RH112M11DS		$.....		Varies	....	....	24,000	...	...	....	....	....	...	...	..	600	...	22⅞ x 47¼ x 55½	1/6	610	12	875	...	...
RH112H11DS		.....		Varies	....	....	32,800	...	...	....	....	....	...	...	..	600	...	22⅞ x 47¼ x 55½	¼	720	12	1,150	...	...
RH112M14DS		.....		Varies	....	....	37,000	...	...	....	....	....	...	...	..	730	...	22⅞ x 54⅝ x 55½	¼	640	12	1,350	...	...
RH112H14DS		.....		Varies	....	....	46,800	...	...	....	....	....	...	...	..	740	...	22⅞ x 54⅝ x 55½	⅓	720	12	1,650	...	...
RH212M11DS		.....		Varies	....	....	47,600	...	...	....	....	....	...	...	..	950	...	22⅞ x 64⅝ x 55½	⅓	660	12	1,750	...	...
RH212M14DS		.....		Varies	....	....	73,500	...	...	....	....	....	...	...	..	1,100	...	22⅞ x 74⅝ x 55½	½	670	12	2,700	...	...
RH212H11DS		.....		Varies	....	....	51,500	...	...	....	....	....	...	...	..	965	...	22⅞ x 64⅝ x 55½	½	740	12	2,100	...	...
RH212H14DS		.....		Varies	....	....	86,800	...	...	....	....	....	...	...	..	1,120	...	22⅞ x 74⅝ x 55½	¾	795	12	3,500	...	...
K-2	.....	$.....		Varies	....	....	....	...	...	....	....	....	...	...	..	‡	...	51 x 39⅜ x 74	½	...	12	1,000	...	...
K-2½	....	.....		Varies	....	....	....	...	...	....	....	....	...	...	..	‡	...	51 x 39⅜ x 79	¾	...	15	1,500	...	...
K-3	.....	.....		Varies	....	....	....	...	...	....	....	....	...	...	..	‡	...	51 x 51 x 87	1	...	18	2,400	...	...
K-3½	.....	.....		Varies	....	....	....	...	...	....	....	....	...	...	..	‡	...	51 x 63 x 93	1½	...	21	3,500	...	...
K-4	.....	.....		Varies	....	....	....	...	...	....	....	....	...	...	..	‡	...	51 x 75 x 100	1½	...	24	4,600	...	...
K-4½	.....	.....		Varies	....	....	....	...	...	....	....	....	...	...	..	‡	...	63 x 76⅜ x 107	2	...	27	6,000	...	...
K-5	.....	.....		Varies	....	....	....	...	...	....	....	....	...	...	..	‡	...	89 x 89 x 113	3	...	30	7,500	...	...
K-5½	.....	.....		Varies	....	....	....	...	...	....	....	....	...	...	..	‡	...	89 x 89 x 120	3	...	33	10,000	...	...
R-35	.....	.....		Varies	....	....	....	...	...	....	....	....	...	...	..	1,050	...	66 x 44⅛ x 33⅜	¼	1,100	7½	1,300	...	...
R-50	.....	.....		Varies	....	....	....	...	...	....	....	....	...	...	..	1,400	...	66 x 53⅛ x 38⅜	⅓	820	9	1,700	...	...
R-75	.....	.....		Varies	....	....	....	...	...	....	....	....	...	...	..	1,850	...	66 x 74⅜ x 38⅜	¾	840	9	2,500	...	...
R-90	.....	.....		Varies	....	....	....	...	...	....	....	....	...	...	..	2,400	...	66 x 72⅛ x 52⅛	1	660	12	3,500	...	...

*Cold water used. †Grams per hour. ‡Varies according to amount of coil surface.

Baker

Baker Ice Machine Co., Inc.
Omaha, Nebr.

Functions — Cooling, dehumidifying, and cleaning, with humidifying optional.

Cabinet—Baker steel cabinet, lacquer finish, not insulated.

Compressor — Baker water-cooled compressor, two cylinders on models 2,000, 3,000, and 4,000; four cylinders on models 5,000 and 6,000; eight cylinders on models 7,000, 8,000, and 9,000.

High side safety cutout. Pressure or thermostat type control.

Cooling System—Type optional.

Control — Thermostatic expansion valve and float valve optional; thermostat, liquid line solenoid valve, and water-regulating valve standard; humidistat extra; air by-pass dampers special.

Remote Floor, Suspended or Duct Type

Model	No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	COMPRESSOR Bore & Stroke	Speed R.p.m.	Motor Hp.	Input Watts	Heat Capac. B.t.u.	Humidification Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
†2000	....	.....	...	0	....	....	....	Freon	...	3¾ x 3½	...	3	...	0	...	...	1,700	91 x 58 x 30	...	...	..	...	...	...
†3000	....	.....	...	0	....	....	....	or	...	3¾ x 3½	...	5	...	0	...	...	2,000	91 x 58 x 30	...	...	..	...	...	...
†4000	....	.....	...	0	....	....	....	CH_3Cl	...	3¾ x 3½	...	7½	...	0	...	...	2,300	91 x 58 x 32	...	...	..	...	...	...
†5000	....	.....	...	0	....	....	....		...	3¾ x 3½	...	10	...	0	...	...	2,700	91 x 84 x 30	...	...	..	...	...	...
†6000	....	.....	...	0	....	....	....		...	3¾ x 3½	...	15	...	0	...	...	3,100	91 x 84 x 34	...	...	..	...	...	...
‡7000	....	.....	...	0	....	....	....		...	3¾ x 3½	...	20	...	0	...	...	3,500	111 x 82 x 42	...	...	..	...	...	...
‡8000	....	.....	...	0	....	....	....		...	3¾ x 3½	...	25	...	0	...	...	3,900	111 x 82 x 45	...	...	..	...	...	...
‡9000	....	.....	...	0	....	....	....		...	3¾ x 3½	...	30	...	0	...	...	4,300	111 x 120 x 42	...	...	..	...	...	...

†Remote floor-type models designated by FT, suspended by C, duct type by FS. ‡Remote models designated by FT, duct type by FS.

June Sales Total of Crosley Branch Is Better Than '35

CHICAGO — While changeable weather kept its June sales from hitting an expected high, the Crosley Distributing Corp. 160 E. Illinois St. here, sold, during the month of June approximately 30 to 40% more boxes than in June 1935, and had the best May sales month in its history, declare C. S. Tay, manager.

The distributing company does all the installation and servicing of Crosley units sold by its dealers in Chicago and within a radius of 50 miles. To accomplish this, the company maintains 14 service trucks.

"We make our service charges as low as possible, and as soon as the service department is making profits, we lower the charges," stated Mr. Tay.

Dealers of this distributorship who are selling the greatest number of electric refrigerators, in Mr. Tay's opinion, are those whose salesmen are doing house-to-house canvassing.

Proof of this fact can be found in a perusal of the company's files, where a record is kept of each sale made by a Crosley dealer in the distributing company's territory.

Mr. Tay cited one instance in which a dealer record of a sale was sent in. Several months later, two other Crosley sales made to prospects in the same block as the one mentioned above, were reported into the office. The later sales, however, were made by salesmen of Crosley dealers other than the one who originally sold a refrigerator in this particular block.

"Which proves," Mr. Tay concluded, "that the first salesman evidently didn't follow up his sale and use it as a contact point in talking to the buyer's neighbors."

Approximately 400 dealers recently attended the new-line showing of Crosley 1936 radios which the Crosley Distributing Corp. held here recently.

Appliance Sales of New Jersey Utility Total $614,608 in 6 Mos.

ASBURY PARK, N. J.—Total appliance sales for the Jersey Central Power and Light Co. for the first six months of 1936 amounted to $614,808, as compared with $535,443 for the corresponding period of last year, or a gain for the half-year period of $79,365, B. A. Siple, general sales manager, reported at the utility's mid-year sales meeting.

Included in the sales figures, he said, are the results of the special campaign on Frigidaires, electrical appliances, and other products.

Among those who addressed the meeting were Corley W. Kirby, and John Walker, both of Frigidaire Corp.

58,029 Refrigerators Sold In Associated System's Jubilee Drive

NEW YORK CITY—Preliminary final reports covering the Associated Gas & Electric System's 1936 Refrigeration Jubilee sales drive, show that a total of 58,029 electric and gas refrigerators were sold from January 1 to June 30 by participating properties and dealers.

Of this number, 16,049 represented company sales, and 41,980 dealer sales, making the highest contest sales accomplishment of the A. G. E. system to date.

Leading the entire system on both company and dealer sales in the electric division was the Florida Public Service Co. with 963 unit sales, more than double its 408 unit quota.

Selling 616 units, the Florida Power Corp. passed its quota of 245 units to lead the system on company sales, while Rochester with 357 gas units against a quota of 134, led the company sales in the gas division.

With these preliminary reports still incomplete, system officials expect that the final results of the drive will show that more than 60,000 units were sold by company properties and dealers who participated in the contest.

6,847 Appliance Sales Made In 69% of Contest of Georgia Power

ATLANTA—Sale of 6,847 electric appliance units up to July 3 brought for the participants in the Georgia Power Co.'s sales circus an 85.6% fulfillment of the 8,000 unit quota, with only 69% of the contest period elapsed.

Of this unit total, 4,057 were refrigerators, 1,411 electric ranges, 914 water heaters, and 465 commercial refrigeration and air-conditioning installations.

With 99.5% of quota sold, Rome division led the contestants.

'Standing Room Only' Crowd at Theater's 'Bank Night' Program Sees and Hears G-E Story While Waiting for Drawing of Prize

SOUTHBRIDGE, Mass. — Everett Oldham, sales manager of Webster & Southbridge Gas & Electric Co., General Electric dealer here, devised a clever promotional scheme to cash in on a $210 "bank night" sponsored by the Strand theater, located just across the street from his company's headquarters.

The theater was offering a cash prize of $35 every week to the holder of a lucky ticket, providing the ticket-holder was present when the number was called. Six consecutive drawings of numbers held by absentees pyramided the total to $210.

Mr. Oldham pictured what the situation would be on the next "bank night." Fully 5,000 people would be present—and most of them would have to wait outside because of the theater's limited seating capacity. It looked to him like a good chance to build up General Electric refrigerators, ranges, and waterheaters among this overflow.

So he worked up attractive window displays, including an action display on refrigerators, and had them set up in time for the big night. But still he wasn't satisfied that this would give him the utmost publicity possible.

Finally he hit upon another idea—why not arrange a screen on the roof, in full view of the waiting 5,000, and run off refrigerator, range, and dishwasher films, turning up the volume so the crowd could hear the sound that accompanies the films?

This he did—and instead of standing around, first on one foot, then on the other, the crowd was entertained by pertinent stories of G-E refrigerators, ranges, and other home appliances.

Two G-E Kitchen Courses For Home Service Workers Will Be Held in August

CLEVELAND — Two remaining General Electric Kitchen Courses in the series of three offered this summer for field home service workers will be held Aug. 3-7 inclusive, and Aug. 10-14, in the G-E home service headquarters here.

Conducted under Edwina Nolan, home service director, the two five-day courses will include refrigeration, range, dishwasher, electric sink demonstrations, a home lighting course (conducted by E. W. Commery, engineer in charge of residential lighting), and a day in which the principles, functions, and operations of a home service department will be emphasized.

Capacity attendance at the first course, held July 13-17, is reported by Miss Nolan.

Frigidaire Birmingham Sales Beat '35 Total

BIRMINGHAM, Ala. — Frigidaire sales for the first six months of the year in the Birmingham district exceeded those for all of last year, reported R. C. Golt, district manager, at a meeting July 9 here of some 75 Frigidaire dealers and salesmen.

Dealers represented at the meeting included Flint Refrigeration Co., Domestic Electric Co., Alabama Appliance Co., and Kilgore Furniture Co.

G-E Dealer Appointed

STAMFORD, Conn. — Appointment of C. O. Miller Co., department store here, as a dealer for the complete line of General Electric home appliances, was recently announced by Rex Cole, Inc., distributor. A model kitchen has been set up in the store's appliance department.

Woman Salesmanager Uses Electric Chart To Keep Tab on Salesmen's Records And to Keep Them on Their Toes

OMAHA — Using an electrically-lighted sales chart to analyze the work of retail salesmen, Mrs. Ethel Marsh, retail sales manager for Nebraska Power Co., Kelvinator dealer, keeps a daily tab on their work and peps them up to a quota of $2,000 a month.

The electrically-lighted chart, says Mrs. Marsh, tells at a glance more about a salesman's work than could be dug out of sales records in three hours, as well as furnishing the information in graphic and impressive form. It is especially valuable, she says, in conducting sales conferences.

The chart consists of 10 large dials, one for each salesman, mounted on composition board. Under each dial is the salesman's name, and above is a small electric light, controlled by a button on Mrs. Marsh's desk. The dials are numbered from 100 to 2,000, representing sales value in dollars.

Short hand on each dial represents the quota for that particular salesman for the month, and the long hand indicates the actual volume to date.

Spaces for noting the total sales for each salesman for each month, the monthly total of individual sales, and a grand total of all sales, are located in the center of the board, with an electric light over each column. By using the push-button system on her desk, Mrs. Marsh can call attention to any of the records shown on the chart, and then discuss that salesman's results.

Entire cost of materials for the "robot analyzer," as some call it, did not exceed $75. Designing, painting, assembling, and mounting the chart took three days.

Leo Schumpf, Alhambra, Calif. Hardware Dealer, Finds Diffusion of Displays Pays Dividends

ALHAMBRA, Calif.—On the theory that one man handling all sales is the best selling method, Leo F. Schumpf closed every one of the 176 refrigerator sales that made his hardware store the leading dealership in this city last year.

"To sell, a man must have complete confidence that anything he does is correct; that is the reason the 'boss' makes the best man to close sales," Mr. Schumpf says.

Diffusion is the display rule in his store. Two boxes face the entrance, a string of boxes leads to the office, two more are placed at the entrance to builders' hardware, and several others are placed through the store where they will get maximum attention.

Mr. Schumpf trains his salesmen to bring refrigeration into the selling whenever the slightest opportunity arises. With the stock scattered throughout the store, the attention of the customer is caught and salesmen have a chance to play-up the subject.

An average of one out of a hundred customers so contacted proves to be a live prospect and makes the process worth while, he finds.

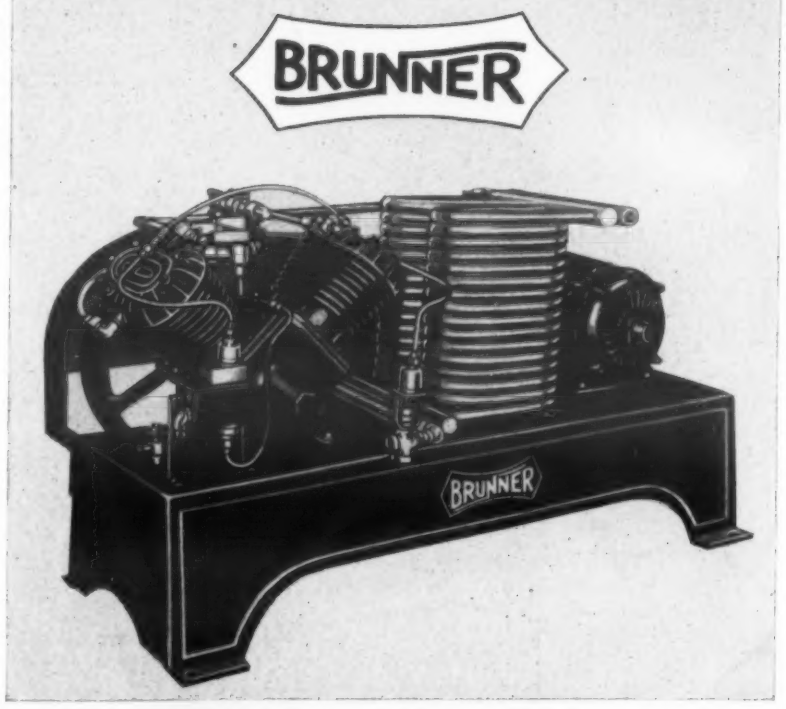
The local utility office, in which Mr. Schumpf has a refrigerator on display, is the chief source of outside leads. At certain times a salesman works there picking up tips, and at all times a large sign advertises the hardware store.

No commissions or other inducements are offered customers for leads. Mr. Schumpf believes that this selling method creates ill-will.

"When we ask a customer to follow such a plan, she immediately wonders how much commission someone made on her," he says.

•NO...THIS UNIT IS NOT "Wired for Sound"

BRUNNER CONDENSING UNIT W-500
a smooth-running, heavy duty model specially suited for big commercial applications...5 H.P....water cooled.



Nobody has ever been bothered by "sound effects" when a Brunner Refrigeration or Air Conditioning Unit snaps on—or while it's running. Brunner engineers licked the problem of noise long ago with a sensible counterbalanced design which emits only the slightest purr. And by cutting down vibration to a minimum, friction naturally is reduced and efficiency enhanced... All in all, Brunner Condensing Units and Compressors give the kind of performance that brings satisfaction for many years to come. Get the reasons first hand by sending for complete information on the forty-seven condensing units and five compressors, ranging from 1/4 H. P. to 15 H. P. for practically every installation requirement. Brunner Manufacturing Co., Utica, N.Y., U.S.A.

BRUNNER CONDENSING UNITS and COMPRESSORS

Buffalo Forge

Buffalo Forge Co.
Buffalo, N. Y.

Functions—Remote or suspended type and suspended type: cooling and dehumidifying. Duct type: heating, cooling, dehumidifying, humidifying, and cleaning.

Cabinet—Remote or suspended type: Buffalo Forge steel cabinet, paint finish, not insulated. Suspended type: Buffalo Forge cadmium-plated steel cabinet, not insulated. Duct type: Buffalo Forge steel cabinet, paint finish, insulation optional as specified.

Blower—Remote or suspended type: Buffalo Forge centrifugal fans. Make and type of motor optional, direct connected. Suspended type: Buffalo Forge disc fans. Blower drive: overhung wheel on motor shaft. Duct type: Buffalo Forge centrifugal fans, make and type of motor as specified. V-belt drive.

Air Circulation—Remote or suspended type: air intake in bottom, discharge in top in remote units; intake in back, discharge in front in suspended units, fresh air intake provided. Suspended type: air intake in back, discharge in front, louvre deflector discharge grilles. Duct type: air intake in back, discharge in front, fresh air intake provided.

Cooling System—Direct expansion or circulating cold water on all models. Aerofin copper cooling coils.

Heating System—Aerofin copper coils, may be used with hot water Heating capacities, model 121-PC, 57,000 B.t.u.; 122-PC, 114,000; 123-PC, 155,000; 151-PC, 114,000; 152-PC, 228,000; 153-PC, 342,000; 182-PC, 450,000; 212-PC, 684,000.

Type of Humidifier—Coil and pan.

Air Cleaning Medium—Owens-Illinois glass filters.

Remote Floor or Suspended Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Pt.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification* Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
254-FC	$.....	...	0	12,500	37,500	50,000	Freon or	...	12,500	37,500	50,000	30	2	0	...	800	47†	1	1,150	11½	3,240	...	...
258-FC	.....	...	0	19,000	57,000	76,000	CH_3Cl or	...	19,000	57,000	76,000	35	3	0	...	925	47†	1	1,150	11½	2,850	...	...
354-FC	.....	...	0	18,600	55,900	74,500	Water or	...	18,600	55,900	74,500	35	3	0	...	1,050	68†	1½	1,150	11½	4,860	...	...
358-FC	.....	...	0	28,500	85,500	114,000	Brine	...	28,500	85,500	114,000	40	4	0	...	1,200	68†	1½	1,150	11½	4,280	...	...
454-FC	.....	...	0	24,750	74,250	99,000		...	24,750	74,250	99,000	40	4	0	...	1,250	86†	2	1,150	11½	6,480	...	...
458-FC	.....	...	0	38,000	114,000	152,000		...	38,000	114,000	152,000	45	5	0	...	1,450	86†	2	1,150	11½	5,700	...	...
3154-FC	.....	...	0	35,000	105,000	140,000		...	35,000	105,000	140,000	55	2	0	...	1,650	86†	3	1,150	15	9,150	...	...
3158-FC	.....	...	0	54,000	161,000	215,000		...	54,000	161,000	215,000	60	4	0	...	1,850	86†	3	1,150	15	8,050	...	...
3554-FC	.....	...	0	49,500	149,000	198,500		...	49,500	149,000	198,500	75	2	0	...	1,950	86†	5	1,150	18	12,960	...	...
3558-FC	.....	...	0	76,000	228,000	304,000		...	76,000	228,000	304,000	80	3	0	...	2,200	86†	5	1,150	18	11,400	...	...
Suspended Type																							
413-SC	$.....	....	0	4,600	14,000	18,600	Freon or	..	4,600	14,000	18,600	4	¼	0	...	175	18 x 22½ x 16¾	½0	1,750	12	700	...	..
417-SC	.....	....	0	6,400	18,800	25,200	CH_3Cl or	..	6,400	18,800	25,200	8	1	0	...	240	23¼ x 25½ x 19	½0	1,150	16	880	...	..
419-SC	.....	....	0	11,300	33,900	45,200	Water or	..	11,300	33,900	45,200	12	3½	0	...	330	27 x 28½ x 19¾	⅛	1,150	18	1,630	...	..
213-SC	.....	....	0	3,000	9,000	12,000	Brine	..	3,000	9,000	12,000	3	¼	0	...	125	18 x 22½ x 16¾	½0	1,750	12	820	...	..
217-SC	.....	....	0	4,000	12,000	16,000		..	4,000	12,000	16,000	6	1	0	...	180	23¼ x 25½ x 19	½0	1,150	16	1,040	...	..
219-SC	.....	....	0	7,300	22,000	29,300		..	7,300	22,000	29,300	9	3½	0	...	240	27 x 28½ x 19¾	⅛	1,150	18	1,915	...	..
Duct Type																							
121-PC	$.....	....	....	10,300‡	20,000‡	30,300‡	Freon or	..	10,300	20,000	30,300	18	.87	10	...	750	22 x 30 x 68	⅓	...	11½	800	...	..
122-PC	.....	....	....	20,600	40,000	60,600	CH_3Cl or	..	20,600	40,000	60,600	20	1.3	20	...	1,150	22 x 50 x 68	¾	...	11½	1,600	...	..
123-PC	.....	....	....	30,900	60,000	90,900	Water or	..	30,900	60,000	90,900	24	2.2	30	...	1,550	22 x 64 x 68	1	...	11½	2,400	...	..
151-PC	.....	....	....	20,600	40,000	60,600	Brine	..	20,600	40,000	60,600	28	.87	20	...	1,200	30½ x 36 x 73	¾	...	15	1,600	...	..
152-PC	.....	....	....	41,200	80,000	121,250		..	41,200	80,000	121,250	30	1.7	40	...	2,000	30½ x 64 x 73	1½	...	15	3,200	...	..
153-PC	.....	....	....	61,800	120,000	182,000		..	61,800	120,000	182,000	40	3.0	60	...	2,500	30½ x 84 x 73	2	...	15	4,800	...	..
182-PC	.....	....	....	82,400	160,000	242,500		..	82,400	160,000	242,500	60	3.5	80	...	3,200	42½ x 75 x 90	3	...	18	6,400	...	..
212-PC	.....	....	....	124,000	240,000	364,000		..	124,000	240,000	364,000	80	3.0	80	...	4,400	62 x 84 x 96½	5	...	21	9,600	...	..

*Temperature used: Five lbs. steam pressure. †Height and depth vary, depending on type. ‡Ratings for three-row coil. One to five rows can be furnished.

Carbondale

Carbondale Machine Corp.
Harrison, N. J.

Functions — Self-contained type: cooling and dehumidifying. Suspended or duct and duct types: heating, cooling, humidifying, dehumidifying, and cleaning.

Cabinet—Self-contained type: Carbondale steel cabinet, crackled walnut finish, not insulated. Suspended or duct and duct types: Carbondale insulated steel cabinet, paint finish.

Compressor — Self-contained type: Carbondale water-cooled compressor, two cylinders on RH-1, four cylinders on RH-2. High side safety cutout. Automatic dual pressure type compressor control. Suspended or duct and duct types: Carbondale water-cooled compressor; four cylinders on models 1-DV, 2-DV, 1-DH, and 2-DH; eight cylinders on 4-DV and 4DH; two units of four cylinders each on 3-DV, 5-DV, 3-DH, and 5-DH. High side safety cutout. Pressurestat and thermostat compressor control.

Blower—Self-contained type: propeller-type blower. Direct drive. Suspended or duct type: propeller-type blower. Worthington multi-V drive. Duct type: Forward-curve blade, centrifugal-type blower. Worthington multi-V drive.

Air Circulation—Self-contained type: air intake in rear, discharge in front. No fresh air intake. Special diffuser grilles, adjustable horizontally and vertically. Suspended or duct type: air intake in rear, discharge in front. Fresh air intake provided. Duct type: air intake in side at bottom, discharge in side or top. Fresh air intake provided.

Cooling System—Direct expansion and circulating cold water. Aerofin copper finned coils.

Heating System—Aerofin copper finned coils, can be used with hot water.

Type of Humidifier—Spray.

Air Cleaning Medium—American Air filters.

Controls—Self-contained type: thermostat, liquid line solenoid valve, and water-regulating valve. Suspended or duct type and duct type: thermostatic expansion valve, humidistat, thermostat, liquid line solenoid valve, water regulating valve, and multiple circuit control.

Self-Contained Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Pt.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	COMPRESSOR Bore & Stroke	Speed R.p.m.	Motor Hp.	Input Watts	Heat Capac. B.t.u.	Humidification* Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
SRC-1	$.....	58	0	....	....	8,450	Freon or	...	2½ x 1¾	475	1	...	0	0	...	80	12⅝ x 15¾ x 13	..	...	...	465	...	..
SRC-2	.....	130	0	....	....	18,100	CH_3Cl	...	3¼ x 2¼	325	2	...	0	0	...	130	18⅝ x 21¾ x 14	..	...	...	1,500	...	..
SRC-3	.....	163	0	....	....	31,000		...	3¼ x 2¼	275	3	...	0	0	...	150	20½ x 24 x 17	..	...	...	....	...	..
Suspended or Duct Type																							
1-DH	.....	173	93	....	....	47,000‡	Freon or	...	3¼ x 2¼	460	5	...	100,000	...	...	1,600†	30 x 57 x 68	½	833-1,185	12	1,040-1,900	500	..
2-DH	.....	360	194	....	....	99,000‡	CH_3Cl	...	4¼ x 3	360	10	...	210,000	...	...	2,000†	37¼ x 65 x 79¾	1	664- 975	15	2,200-4,020	500	..
3-DH	.....	606	330	....	....	175,000‡		...	4¼ x 3	360	(2) 10	...	371,000	...	...	2,400†	48 x 74 x 95½	2	593- 850	18	3,850-7,080	500	..
4-DH	.....	810	440	....	....	234,000‡		...	4¼ x 3	450	25	...	495,000	...	...	3,000†	48 x 106½ x 95½	3	465- 668	18	5,150-9,450	500	..
5-DH	.....	950	510	....	....	272,000‡		...	4¼ x 3	450	25	...	575,000	...	...	3,300†	48 x 106½ x 95½	5	485- 634	18	6,000-11,000	500	..
Duct Type																							
1-DV	.....	...	...	....	....	47,000‡	Freon or	...	3¼ x 2¼	525	5	...	100,000	...	...	1,550†	83½ x 45¼ x 32	½	833-1,185	12	1,040-1,900	500	..
2-DV	.....	...	...	....	....	99,000‡	CH_3Cl	...	4¼ x 3	450	10	...	210,000	...	...	1,950†	92¼ x 57¼ x 42¼	1	664- 975	15	2,200-4,020	500	..
3-DV	.....	...	...	....	....	175,000‡		...	4¼ x 3	450	(2) 10	...	371,000	...	...	2,300†	99½ x 68 x 62	2	593- 850	18	3,850-7,080	500	..
4-DV	.....	...	...	....	....	234,000‡		...	4¼ x 3	550	25	...	495,000	...	...	2,900†	99½ x 100½ x 66½	3	465- 668	18	5,150-9,450	500	..
5-DV	.....	...	...	....	....	272,000‡		...	4¼ x 3	550	(2) 15	...	575,000	...	...	3,200†	99½ x 100½ x 66½	5	485- 634	18	6,000-11,000	500	..

*Water temperature variable †Gross weight without compressor and condensing unit. ‡These models are available for circulation of cold water and are designated by WH and WV model numbers. Amount of water circulated and capacities are: Model 1-WH and 1-WV—8.4 g.p.m. and 41,800 B.t.u.; 2-WH and 2-WV—17.6 and 88,100; 3-WH and 3-WV—31.2 and 156,000; 4-WH and 4WV—41.6 and 208,000; 5-WH and 5-WV—48.5 and 242,000.

Clarage

Clarage Fan Co.
Kalamazoo, Mich.

Functions—Any combination of heating, cooling, humidifying, dehumidifying, and cleaning.

Cabinet—Steel insulated cabinets with crackled enamel finish and chrome trim on Duotherm line and enamel finish on Moditherm line.

Heating—Coils can be used for hot water. Heating capacity: Models 44 and 440, 72,000 to 170,200 B.t.u.; 46 to 460, 107,600 to 255,000; 48 and 480, 143,700 to 340,000; 58 to 580, 230,000 to 544,500.

Humidifier—Atomized spray.

Air Cleaning Medium—Glass wool filters.

Controls—Water valve, damper operator, room thermostat, room humidistat, modulating valve, switch, and strainer.

Suspended or Duct Type (Moditherm)

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
440 Min.	$.....	4.16	4.16	....	....	....	.....	..	11,520	22,600	34,120	..	..	30	1,600	...	60 x 54¼ x 51¼	¼	223	14⅝	1,300	706	..
440 Max.	.....	4.16	4.16	....	....	....	.....	..	35,700	78,500	114,200	..	..	72	2,125	...	60 x 54¼ x 51¼	1½	845	14⅝	2,830	1,540	..
460 Min.	.....	6.25	6.25	....	....	....	.....	..	17,380	33,900	51,180	..	..	30	2,150	...	60 x 74¼ x 51¼	¼	278	(2) 13	1,945	763	..
460 Max.	.....	6.25	6.25	....	....	....	.....	..	53,550	117,850	171,400	..	..	72	2,900	...	60 x 74¼ x 51¼	2	976	(2) 13	4,240	1,663	..
480 Min.	.....	8.33	8.33	....	....	....	.....	..	23,040	45,200	68,240	..	..	30	2,700	...	60 x 94¼ x 51¼	¼	202	(2) 16¼	2,600	637	..
480 Max.	.....	8.33	8.33	....	....	....	.....	..	71,400	157,000	228,400	..	..	72	3,600	...	60 x 94¼ x 51¼	3	794	(2) 16¼	5,670	1,390	..
580 Min.	.....	13.33	13.33	....	....	....	.....	..	38,400	75,400	113,800	..	..	30	3,300	...	60 x 94¼ x 63¼	⅓	220	(2) 17⅞	4,160	844	..
580 Max.	.....	13.33	13.33	....	....	....	.....	..	119,000	261,500	380,500	..	..	72	4,400	...	60 x 94¼ x 63¼	5	653	(2) 17⅞	9,070	1,562	..
Duct Type (Duotherm)																							
44 Min.	.....	4.16	4.16	....	....	....	.....	..	11,520	22,600	34,120	..	..	30	1,300	...	35⅛ x 46¾ x 64⅛	¼	223	14⅝	1,300	706	..
44 Max.	.....	4.16	4.16	....	....	....	.....	..	35,700	78,500	114,200	..	..	72	1,825	...	35⅛ x 46¾ x 64⅛	1½	845	14⅝	2,830	1,540	..
46 Min.	.....	6.25	6.25	....	....	....	.....	..	17,380	33,900	51,180	..	..	30	1,700	...	35⅛ x 66¾ x 64⅛	¼	278	(2) 13	1,945	763	..
46 Max.	.....	6.25	6.25	....	....	....	.....	..	53,550	117,850	171,400	..	..	72	2,420	...	35⅛ x 66¾ x 64⅛	2	976	(2) 13	4,240	1,663	..
48 Min.	.....	8.33	8.33	....	....	....	.....	..	23,040	45,200	68,240	..	..	30	2,100	...	35⅛ x 86¾ x 64⅛	¼	202	(2) 16¼	2,600	637	..
48 Max.	.....	8.33	8.33	....	....	....	.....	..	71,400	157,000	228,400	..	..	72	3,000	...	35⅛ x 86¾ x 64⅛	3	794	(2) 16¼	5,670	1,390	..
58 Min.	.....	13.33	13.33	....	....	....	.....	..	38,400	75,400	113,800	..	..	30	2,700	...	40⅝ x 86¾ x 66⅛	⅓	220	(2) 17⅞	4,160	844	..
58 Max.	.....	13.33	13.33	....	....	....	.....	..	119,000	261,500	380,500	..	..	72	3,840	...	40⅝ x 86¾ x 66⅛	5	653	(2) 17⅞	9,070	1,562	..

Conditionaire

Conditionaire Unit Co.
2821 Montrose Ave., Chicago, Ill.

Functions—Suspended type: cooling.

Cabinet—Steel, green ripple finish. Not insulated.

Blower—Airmaster blower. Signal motor.

Air Circulation—Air intake in rear, discharge in front, no fresh air intake. Louvre deflector discharge grille.

Cooling System—Either direct expansion or cold water circulation. Conditionaire Unit Co. steel fins and tubing cooling coils.

Suspended Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
116	$.....	105	0	....	....	....	†	..	....	....	....	9	..	...	105	155	21 x 23½ x 18	1/12	1,150	16	1,000	....	155
216	.....	215	0	....	....	....	†	..	....	....	....	18	..	...	200	250	21 x 42½ x 18	1/12	1,150	16	2,000	....	310

†Freon, CH_3Cl, NH_3, Water, or Brine.

Air Conditioning

Abundance of Artesian Wells Makes Job of Selling Cooling In Minneapolis Difficult

By T. T. Quinn

MINNEAPOLIS — Air-conditioning dealers in Minneapolis had scant time for conversation during the period in which we were in town.

The record-breaking heat wave (for seven days the temperature was close around the 107° mark, with night temperatures in the middle 80's) was on, and if air-conditioning men were in their offices at all it was only for a few moments, while they picked up something they might need in their next calls.

Some dealers were not to be found, even after as many as three calls—and for a while it began to look as if there wasn't a soul in town who'd stop working long enough to tell anything at all about the shape-up of the air-conditioning picture.

Abundance of Artesian Wells

Three dealers were finally cornered, however, for short periods—and at least a partial insight into the current merchandising picture obtained from their observations and experiences.

Selling refrigeration equipment for air conditioning in Minneapolis and St. Paul, it appears, is considerably more of a problem than it is in several other sections of the country. Principal reason for this is the abundance of deep water artesian wells all about the territory.

If a person wants an air-conditioning system, he can, it seems, sink a deep well almost anywhere, and have 50° F. water to do the job for him, cheaper than refrigeration equipment alone. Majority of jobs installed in the city have been of this type.

Refrigeration dealers, however, have done a sizable portion of this business, and have kept up their installations using refrigeration equipment only, as well. None of them are complaining, particularly, but the feeling that refrigeration equipment sales would be more than doubled if well water were not so plentiful can't help being present.

Combination Systems

Dealers have simply come to the realization that they face a situation considerably different from that in most sections of the country, and have varied their sales approaches to meet it. Many combination systems are being installed—and at least one dealer is selling refrigeration systems alone wherever possible, on the argument that, when the customer moves, he will have something he can take with him to his new location.

Attitude of dealers is not at all antagonistic to deep well systems. Most of them are working very well right along with it, and are selling both types — pushing refrigeration systems, of course, wherever possible.

"Our first duty is to the customer," one dealer phrased it. "If well water will do the job for him, and there's such a method available, why not give it to him? We may not sell as much refrigeration equipment if we do it that way; but after all, we'll win his good will—and in the long run that's the most important thing."

deep well water; executive office, president's office, and directors' room of First National Bank, Minneapolis, were conditioned with refrigeration equipment. General offices of Hardware Mutual Fire Insurance Co. used a combination refrigeration and deep well water system; so did Minnesota Implement Mutual Fire Insurance Co., Owatonna.

Hotel Lowry, St. Paul, used a refrigeration system for conditioning its ballroom, and a combination refrigeration and deep well system for its cafe, cocktail room, and bar.

Special humidifying equipment was installed in the tomato room of Morris Fruit & Produce Co., Minneapolis, and a ventilating system in the midway amusement parlor operated by Harry Weiss, St. Paul. Executive office of the *Minneapolis Star* was conditioned with refrigeration equipment.

The one cafe and grill conditioning job done outside the Twin Cities by Sutherland was in the Wonder Grille, Eau Claire, Wis., and specified refrigeration equipment only.

St. Joseph's hospital, St. Paul, and Eitel hospital, Minneapolis, both were refrigeration systems only. In the latter hospital, the operating room only was conditioned.

The 27 residential air-conditioning jobs done by Sutherland included three in the Lake Minnetonka territory, all using deep well water, and three along White Bear Lake, two using refrigeration and the other well water. Of the 18 installations made in the Twin Cities, 12 used refrigeration equipment, the rest deep well water.

Interesting among home installations were two made for C. A. Bardwell, builder, in Interlachen Park, Minneapolis; another in the home of Mrs. Thomas Barden, Ashland, Wis., and one for S. T. Merryman, St. Cloud, Minn.

(*Concluded on Page 9, Column 1*)

Sutherland Corp., G-E Distributor Lists Type Of Equipment Required on 74 Jobs to Prove That Variety Is Needed

A good example of the variety of installations which a refrigeration outlet is called upon to handle in air conditioning is given by a glance at the 74 recent installations made by Sutherland Air Conditioning Corp., General Electric distributor in the Minneapolis-St. Paul territory.

Of the 74 installations, 42 were with refrigeration equipment alone, and four more used a combination of refrigeration and deep well water. Only 19 used deep well water alone; six were winter conditioning systems; one used brine; one specified humidification alone; and another was ventilating equipment only.

27 Installations in Homes

Twenty seven of the installations were in residences, for summer cooling purposes only, and of this number 15 used refrigeration equipment and 12 deep well water.

Manager R. C. Dutt, who had only about five minutes to spare, said that the hot weather was taxing his entire organization to the limit.

"We've been working day and night, and still we haven't been able to catch up with inquiries," he said. "This hot weather has certainly sent interest in air conditioning to a peak mark.

"We thought there was plenty of interest before the heat wave struck—but it was never anything like this."

The firm has 11 salesmen, Mr. Dutt said, seven of them working in the residential cooling field, two in commercial air conditioning, and two in the new building field. Backing up the field force is Sutherland's engineering department, which does the estimating and figuring on the individual jobs.

'Walk-In' Prospects

During the short time we were in the office, two elderly men came in and inquired about air conditioning their homes. The wives of both men were not in good health, and both had experienced considerable suffering as a result of the abnormally hot weather.

A friend of both men had had an air-conditioning system installed in his home recently—to cool his living room in the day and his bedroom at night—and it had been working just fine. The men were anxious to know about prices, and when the job could be set up and working.

It took some time for the salesman to impress the prospects with the fact that air conditioning was not something that could be installed overnight; that it was something that was bound to vary with individual home conditions; and that a system which performed perfectly in one home would not do nearly so efficient a job in another.

The salesman spoke of heat loads, insulation, ductwork, and a lot of other things—and the men were apparently surprised to find that there was as much to air conditioning as all that. The matter of ductwork puzzled one of them no end.

"There oughtn't be much trouble about that," he said. "My home is well built, and it ought to be easy to run those things from one room to another."

The salesman explained that there were several problems involved, including economy, efficiency, and appearance. The prospect seemed to understand this—and left after making an appointment for the engineer to call at his home next afternoon and make a preliminary survey.

Commercial Installations

Of the commercial air-conditioning installations made by Sutherland up to about three weeks ago—there were 47 of them—27 used refrigeration equipment, compared to seven with deep well water and four more with a combination deep well and refrigeration system.

A china shop, a clinic, a courtroom, a bank's executive offices, a tomato storage room, a school, a hospital operating room, an amusement center—all these were covered in the commercial installation range, in addition to several offices, funeral parlors, grills, and cocktail rooms.

Winter Air Conditioners

Winter conditioning systems were installed in the courtroom of the Albert Lea, Minn., courthouse; the general office of Jensen Printing Co., Minneapolis; the office of John Leslie Paper Co.; general offices of North American Life & Casualty Insurance Co.; and in the Schlauder and Vogel buildings, in New Ulm, Minn.

Twenty eight of the 47 commercial installations were in private or general offices, and 16 called for the use of refrigeration equipment other than deep well water. Restaurants and cocktail rooms conditioned totaled six; three were installed in mortuaries, two in hospitals.

Refrigeration equipment was installed in the china shop operated by Alex Anderson & Co., Minneapolis; offices of the Dispatch-Pioneer Press Co. in St. Paul were conditioned with

EVERY THERMOSTATIC EXPANSION VALVE IDENTIFIED BY THIS MARK PERFORMS WITH ABSOLUTE PRECISION

If you want absolute precision in the performance of thermostatic controls, you will get just that by specifying A-P Thermostatic Expansion Valves.

By efficient manufacturing methods, combined with a pride in the performance of everything we design and build, we have produced a line of controls that deliver with unfailing dependability.

Temperatures higher or lower than the bulb do not affect the precision performance of A-P Thermostatic Expansion Control Valves. They can be installed any place—in any position.

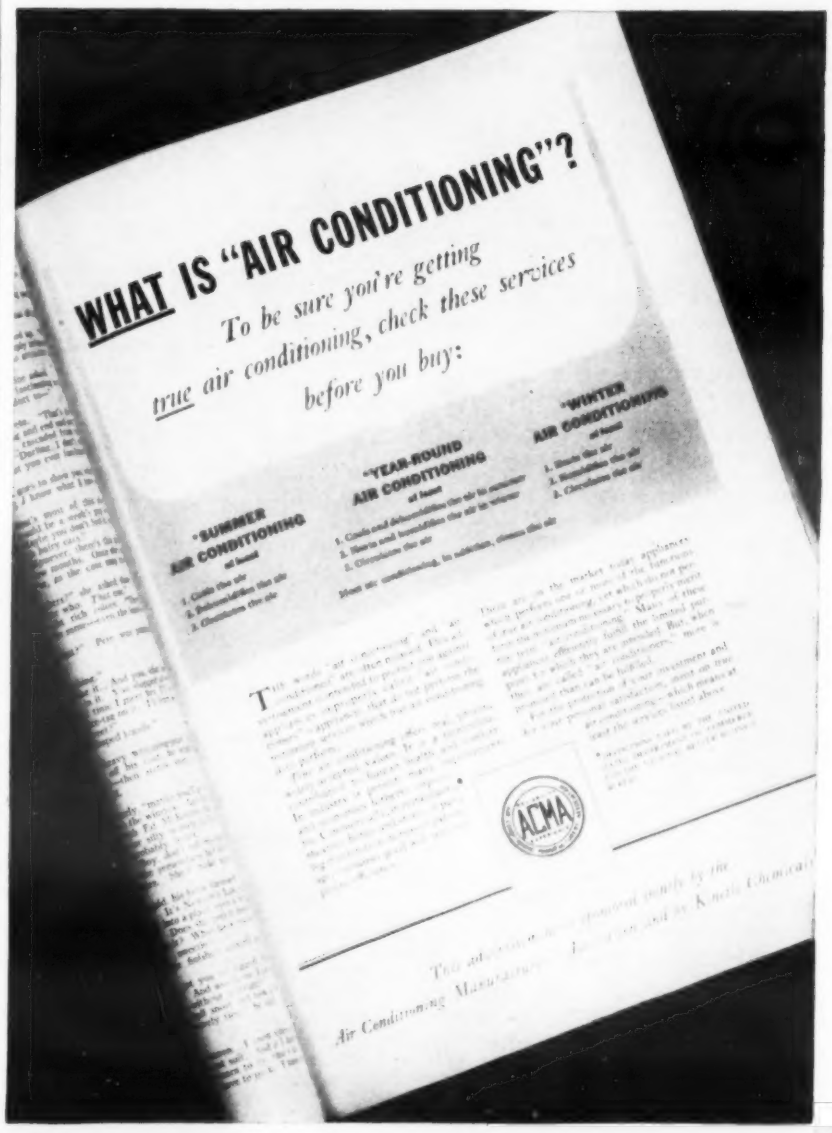
For complete A-P Thermostatic Expansion Valve Bulletin, Address your letter to Dept. E-1.

AUTOMATIC PRODUCTS CO.
121 NO. BROADWAY — MILWAUKEE, WIS.

SIMPLY MAIL THIS COUPON

NAME .....
ADDRESS .....
TOWN ..... STATE .....

To protect **YOUR BUSINESS** *and profits, we are telling this story to the public and to your large-building prospects*


WHAT IS "AIR CONDITIONING"?
To be sure you're getting true air conditioning, check these services before you buy:
"SUMMER AIR CONDITIONING"
"YEAR-ROUND AIR CONDITIONING"
"WINTER AIR CONDITIONING"
ACMA

INADEQUATE, misrepresented equipment can destroy public faith in air conditioning.

Appliances which are called "air conditioners," yet which do not meet the minimum requirements of *true* air conditioning, promise the buyer more than can be fulfilled. However efficiently they may serve their limited purposes, they lower public confidence in and appreciation of *true* air conditioning—injuring your business and ours.

Because of the tremendous sales potential in air conditioning, it is essential that the public should not be confused and disappointed by equipment which does not provide the values justly expected from a product called an "air conditioner."

We invite your cooperation in our efforts to educate the public in the true meaning of air conditioning.

* * *

This advertisement is sponsored jointly by the Air Conditioning Manufacturers' Association and by Kinetic Chemicals, Inc.

THIS MESSAGE IS BEING BROUGHT TO THE ATTENTION OF 698,972 PEOPLE THROUGH THE FOLLOWING PUBLICATIONS:

Time	625,292	Architectural Forum	21,713
Chain Store Age	15,123	Federal Architect	2,300
American Restaurant	12,437	Building & Building Management	2,462
Retailing	6,499	Building Modernization	13,146

TOTAL CIRCULATION 698,972

RELIABILITY ACMA EXPERIENCE AIR CONDITIONING MANUFACTURERS ASSOCIATION

Corozone

Corozone Air Conditioning Corp.
Cleveland, Ohio.

Functions—Self-contained floor type: cooling, dehumidifying, cleaning (model SCU, ionizing in addition). Remote floor-type: cooling, dehumidifying, cleaning, and ionizing (model HC & SWC humidifying in addition). Suspended-type: cooling and humidifying.

Cabinet—Self-contained type: Corozone walnut-finish wood; model KK, SCU are insulated. Remote floor type: Corozone walnut-finished wood. Suspended-type: steel, brown krinkle baked enamel finish.

Compressor—Corozone water-cooled compressor with high side safety cut-out and Cutler-Hammer motor starter and control. Two cylinders on models KK and SCU, 2 or 4 cylinders on models SWC, HC & SWC.

Blower—Corozone blower with Westinghouse motor on all models.

Air Circulation—Self-contained and remote floor type: air intake at bottom right side, discharge in top. Independent discharge grill. Suspended type: air intake at rear and discharge in front. Three-way adjustable deflector louvre grille.

Cooling System—Self-contained and remote-floor type: direct expansion. Copper cooling coils. Suspended type: water, brine or compressor. Copper coils with aluminum fins.

Heating System—Suspended type: copper coils with aluminum fins can be used wth hot water.

Type of Humidifier—Model HC & SWC, Corozone electric.

Air Cleaning Medium—Self-contained and remote floor type: Owens-Illinois filter.

Controls—Self-contained type: thermostatic expansion valve and water regulating valve. Remote-floor type: thermostatic expansion valve.

Self-Contained Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	COMPRESSOR Bore & Stroke	Speed R.p.m.	Motor Hp.	Input Watts	Heat Capac. B.t.u.	Humidification Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
KK	$249.50	30.8	...	5,100†	....	....	Freon	2	.....	....	⅓	...	0	0	225	275	32 x 32 x 18	1/60	1,140	12	600	600	..
SCU	350.00	30.8	...	7,610†	....	....	Freon	4	.....	....	½	...	0	0	320	395	39 x 36 x 18	1/60	1,140	12	600	600	..
Remote Floor Type																							
SWC	$159.00	30.8	...	14,100†	....	....	Freon	4	.....	....	½ to 1	...	0	0	105	138	35⅛ x 32½ x 17¾	1/60	1,140	12	600	600	..
HC & SWC	199.50	30.8	...	14,100†	....	....	Freon	4	.....	....	½ to 1	...	0	..	133	193	15½ x 19½ x 15½	1/60	1,140	12	600	600	..
Suspended Type																							
106-CCU	$134.82	49.5	...	11,400‡	24,750	....	Freon	4	.....	....	¾	...	0	0	59	77	15½ x 19½ x 15½	1/30	1,140	10	325	325	..
126-SCU	166.92	64.5	...	17,500‡	37,275	....	Freon	4	.....	....	1½	...	0	0	85	105	17 x 21 x 15½	1/20	1,140	12	515	515	..
156-CCU	196.85	100.5	...	28,700‡	59,700	....	Freon	..	.....	....	2	...	0	0	113	136	20 x 24 x 17	1/10	1,140	15	850	850	..
186-CCU	229.95	145.5	...	52,650‡	110,000	....	Freon	..	.....	....	3	...	0	0	146	172	23 x 27 x 18½	⅛	1,140	18	1,800	1,800	..
216-CCU	265.74	197.0	...	68,800‡	144,650	....	Freon	..	.....	....	5	...	0	0	179	225	27 x 30 x 20	¼	1,140	20	2,350	2,350	..

†Dehumidification capacity using cold water and amount circulated, respectively: 4,000 B.t.u., 16.56 g.p.h.; 6,000, 21.2; 12,000, 43.0; 12,000, 43.0. ‡Dehumidification capacity same with cold water. Gallons per minute circulated: 5.5, 6.0, 7.5, 9.0, 10.5, respectively.

Crosley

Crosley Radio Corp.
Cincinnati, Ohio.

Functions—Cooling and dehumidifying.

Cabinet—Crosley insulated steel cabinet with lacquer finish.

Compressor—Crosley single-cylinder, air-cooled compressor. Delco condenser-start motor.

Blower—Three-blade fan, steel and tube blower. Delco shaded-pole motor with direct drive.

Air Circulation—Air intake and air discharge under canopy. Fresh air intake provided.

Cooling System—Direct expansion.

McCord hot-tinned copper cooling coils.

Air Cleaning Medium—Provision made for oil-type filter in return air passage; glass wool recommended.

Self-Contained Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	COMPRESSOR Bore & Stroke	Speed R.p.m.	Motor Hp.	Input Watts	Heat Capac. B.t.u.	Humidification Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
.....	$ 99.50	...	0	....	....	800	F-12	½	1½ x 1⅜	550	¼	280	0	0	204	224	32½ x 20¼ x 23	1/100	1,500	7½	75	...	20

Curtis

Curtis Refrigerating Machine Co.
Division of Curtis Mfg. Co.
1912 Kienlen Ave., St. Louis, Mo.

Functions—All models cooling and dehumidifying. Models AB-50 and AB-100, cleaning in addition.

Cabinet—Insulated steel cabinet, lacquer finish.

Blower—Remote floor type: Century motor except AB-50 and AB-100 not specified.

Air Circulation—Remote floor type: air intake front or rear, discharge in top with fresh air intake except models AB-50 and AB-100 have intake in front, discharge in top, no fresh air intake. Suspended type: air intake in rear, discharge in front, no fresh air intake.

Cooling System—All models direct expansion. Suspended type: aluminum fins and copper tube cooling coils; also models AB-50 and AB-100. Power input to condensing unit—models UC-1, 50 watts; UC-2, 60 watts; UC-3, 80 watts; UC-4, UC-5, and UC-6, 90 watts.

Remote Floor Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
A-32-L	$.....	....	....	....	....	46,500	CH_3Cl or	..	....	....	....	....	....	0	800	1,000	102 x 52 x 20⅛	⅓	1,750	..	1,710	855	..
A-32-M	.....	....	....	....	....	53,800	Freon or	..	....	....	....	....	....	0	800	1,000	102 x 52 x 20⅛	½	1,750	..	2,125	1,062	..
A-32-H1	.....	....	....	....	....	61,400	SO_2	..	....	....	....	....	....	0	800	1,000	102 x 52 x 20⅛	½	1,750	..	2,595	1,297	..
A-32-H2	.....	....	....	....	....	70,700		..	....	....	....	....	....	0	800	1,000	102 x 52 x 20⅛	¾	1,750	..	3,320	1,660	..
A-33-L	.....	....	....	....	....	81,400		..	....	....	....	....	....	0	1,100	1,350	102 x 72 x 20⅛	¾	1,750	..	3,320	1,107	..
A-33-M	.....	....	....	....	....	93,700		..	....	....	....	....	....	0	1,100	1,350	102 x 72 x 20⅛	1	1,750	..	3,950	1,317	..
A-33-H	.....	....	....	....	....	108,000		..	....	....	....	....	....	0	1,100	1,350	102 x 72 x 20⅛	1½	1,750	..	5,070	1,690	..
A-42-L	.....	....	....	....	....	124,000		..	....	....	....	....	....	0	1,400	1,700	109 x 72 x 28	1	1,750	..	4,930	1,096	..
A-42-M	.....	....	....	....	....	142,100		..	....	....	....	....	....	0	1,400	1,700	109 x 72 x 28	2	1,750	..	6,620	1,470	..
A-42-H	.....	....	....	....	....	164,300		..	....	....	....	....	....	0	1,400	1,700	109 x 72 x 28	3	1,750	..	7,630	1,695	..
A-43-L	.....	....	....	....	....	188,500		..	....	....	....	....	....	0	1,900	2,250	109 x 102 x 28	1½	1,750	..	7,120	1,054	..
A-43-M	.....	....	....	....	....	216,800		..	....	....	....	....	....	0	1,900	2,250	109 x 102 x 28	2	1,750	..	9,100	1,347	..
A-43-H	.....	....	....	....	....	249,000		..	....	....	....	....	....	0	1,900	2,250	109 x 102 x 28	3	1,750	..	10,440	1,547	..
A-53-L	.....	....	....	....	....	286,000		..	....	....	....	....	....	0	2,100	2,500	109 x 102 x 28	3	1,750	..	9,850	1,458	..
AB-50	.....	....	....	....	....	6,950	Freon or	..	....	....	....	....	....	..	105	165	36⅞ x 24 x 14	..	1,750	..	325	330	35
AB-100	.....	....	....	....	....	13,800	CH_3Cl	..	....	....	....	....	....	..	175	225	36⅞ x 36¼ x 14	..	1,750	..	650	390	70
Suspended Type																							
UC-1	.....	....	....	....	....	9,330	Freon or	..	....	....	....	....	....	..	62	105	16¾ x 17¾ x 25	..	1,750	..	384	377	..
UC-2	.....	....	....	....	....	15,030	CH_3Cl or	..	....	....	....	....	....	..	80	129	18⅞ x 19¾ x 26	..	1,750	..	496	345	..
UC-3	.....	....	....	....	....	22,400	SO_2	..	....	....	....	....	....	..	103	155	21 x 22¼ x 27	..	1,750	..	782	414	..
UC-4	.....	....	....	....	....	25,700		..	....	....	....	....	....	..	107	165	23⅛ x 24¼ x 25	..	1,750	..	1,176	486	..
UC-5	.....	....	....	....	....	30,950		..	....	....	....	....	....	..	113	173	23⅛ x 24¼ x 26	..	1,750	..	1,113	460	..
UC-6	.....	....	....	....	....	34,900		..	....	....	....	....	....	..	119	181	23⅛ x 24¼ x 29	..	1,750	..	1,047	433	..

Delco-Frigidaire

Delco Frigidaire Conditioning Corp.
Dayton, Ohio.

Functions — Self-contained type: models SC-38 and SC-75, cooling and dehumidifying; SC-40, SC-80, SC-301, and SCV-66, cooling, dehumidifying, and cleaning; SCVH-66, heating, cooling, humidifying, dehumidifying, and cleaning. Remote floor type: R50 and R100, cooling and dehumidifying; RH50, and RH100, heating, cooling, humidifying, dehumidifying; cleaning supplied on remote floor type units as extra equipment. Suspended type: SUH300, heating, cooling, dehumidifying, and cleaning; SF-150 and SU-300, cooling, dehumidifying, and cleaning; SUD300, cooling, re-heating, dehumidifying, and cleaning; all others, cooling and dehumidifying, with cleaning available.

Cabinet—Self-contained type: insulated steel cabinet, brown wrinkle finish on SC301; buff lacquer on SCV66 and SCVH66; walnut lacquer on all others. Remote floor type: insulated steel cabinet with butt-grained walnut finish. Suspended type: steel and hard-fiber cabinets on C models, with brown hard-pressed fiber finish; steel cabinets with brown wrinkle finish on S models; not insulated.

Compressor—Frigidaire two-cylinder water-cooled compressor. Delco motor, manual motor starter. High side safety valve.

Blower—Self-contained type: Frigidaire disc cone type blower on models SC38 and SC40, twin centrifugal type on all others. Delco motors, direct connected. Remote floor type: Delco Frigidaire blower. Delco motor, direct connected. Suspended type: Delco-Frigidaire cone-type fan blower on models C-50V, C-50H, C-100V, and C-100H; Delco-Frigidaire disc blower on SF-150; Delco-Frigidaire multi-blade centrifugal on SU-300, SUH-300, and SUD-300; Delco motor, direct connected.

Air Circulation—Self-contained type: air intake in back on models SC-38, SC-40, SC-75, and SC-80; in front on SC-301; front grille and outside intake on SCH-66 and SCVH-66. Air discharge in top. Fresh air intake provided on models SC-40, SC-80, SCH-66, and SCVH-66. Frigidaire octagonal grilles. Remote floor type: air intake in rear, discharge in top, fresh air intake provided. Delco-Frigidaire discharge grille. Suspended type: air intake in rear, discharge in front. No fresh air intake. Delco-Frigidaire discharge grille.

Cooling System—Self-contained type: direct expansion. Remote floor type: direct expansion and circulating cold water. Suspended type: direct expansion.

Heating System—Delco-Frigidaire copper heating coils, can be used with hot water. Heating capacities: model SCH-66, 10,800 B.t.u.; RH-50, 9,600; RH-100, 18,000; SUH-300, 38,400.

Type of Humidifier—Self-contained type: spray. Remote floor type: nozzle.

Air Cleaning Medium—Filter.

Controls—Self-contained type: thermostat on models SC-40, SC-80, SC-301, SCH-66, and SCVH-66; liquid line solenoid valves on SC-75, SCV-66, and SCVH-66; water regulating valve. Remote floor type: thermostatic expansion valve, thermostat, and liquid line solenoid valve. Suspended type: thermostatic expansion valve; liquid line solenoid valve (extra equipment on SF-150, SV-300, SUH-300, SUD-300); thermostat available as extra equipment.

Self-Contained

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT‡ Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	COMPRESSOR Bore & Stroke	Speed R.p.m.	Motor Hp.	Input Watts	Heat Capac. B.t.u.	Humidification Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
SC-38	$.....	....	0	1,010	3,490	4,500	Freon	6	2½ x 3½	590	½	560	0	0	360	452	42⅜ x 26⅜ x 19⅜	1/100	1,120	....	300	...	45
SC-40	.....	.....	0	950	3,320	4,270	Freon	6	2½ x 3½	590	½	560	0	0	400	455	42⅞ x 26¾ x 19¾	1/100	1,120	....	290	...	45
SC-75	.....	.....	0	2,740	4,900	7,640	Freon	8	2½ x 3½	590	1	1,145	0	0	450	615	42⅜ x 29½ x 23⅜	1/30	800	....	300	...	80
SC-80	.....	.....	0	3,200	4,290	7,490	Freon	8	2½ x 3½	590	¾	860	0	0	550	606	42⅞ x 28½ x 23¾	1/30	800	....	325	...	80
SC-301	.....	.....	0	9,600	24,800	34,400	Freon	19	2½ x 3½	590	3	3,180	0	0	1,300	1,750	143 x 51¾ x 31¾	⅛	830	....	1,200	...	..
SCV-66	.....	.....	0	5,040	2,960	8,000	Freon	6	2½ x 3½	590	1	1,000	0	0	600	828	30⅜ x 62 x 20⅛	1/30	800	....	400	...	80
SCVH-66	.....	.....	45	5,040	2,960	8,000	Freon	6	2½ x 3½	590	1	1,000	†10,800	3¼	640	828	30⅜ x 62 x 20⅛	1/30	800	....	400	...	80

†Rated with 1-lb. steam supply. ‡80° inlet condensing water used.

Remote Floor Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
R-50	$.....	....	0	1,650	5,050	6,700	Freon	2	.....	...	...	...	...	0	120	175	26¾ x 26½ x 17⅛	1/100	1,120	....	400	...	..
RH-50	.....	....	40	1,650	5,050	6,700	Freon	2	.....	...	...	...	...	..	130	185	26¾ x 26½ x 17⅛	1/100	1,120	....	400	...	..
R-100	.....	.....	0	3,100	9,000	12,100	Freon	4	.....	...	...	...	...	0	195	277	30 x 36½ x 17⅛	1/16	1,060	....	475	...	..
RH-100	.....	.....	75	3,100	9,000	12,100	Freon	4	.....	...	...	...	...	..	205	287	30 x 36½ x 17⅛	1/16	1,060	....	400	...	..
Suspended Type																							
C-50V	$.....	....	0	1,650	5,050	6,700	Freon	2	....	....	....	...	....	0	95	120	22⅞ x 23⅛ x 14¼	1/100	1,120	....	300	...	..
C-50H	.....	.....	0	1,650	5,050	6,700	Freon	2	....	....	....	...	....	0	95	120	16¾ x 17½ x 19	1/100	1,120	....	300	...	..
C-100V	.....	.....	0	2,800	8,600	11,400	Freon	4	....	....	....	...	....	0	120	160	25⅞ x 33⅛ x 14¼	1/16	1,060	....	400	...	..
C-100H	.....	.....	0	2,800	8,600	11,400	Freon	4	....	....	....	...	....	0	120	160	18¼ x 22¾ x 20¼	1/16	1,060	....	400	...	..
SF-150	.....	.....	0	5,900	11,000	16,900	Freon	5	....	....	....	...	....	0	139	175	18¼ x 23 x 24¾	1/20	800	....	525	...	..
SU-300	.....	.....	0	9,300	24,900	34,200	Freon	10	....	....	....	...	....	0	298	547	16¼ x 51¾ x 42⅜	⅕	830	....	1,350	...	..
SUH-300	.....	.....	160	9,300	24,900	34,200	Freon	10	....	....	....	...	....	0	365	587	16¼ x 51¾ x 47⅝	⅕	830	....	1,350	...	..
SUD-300	.....	.....	0	9,300	24,900	34,200	Freon	10	....	....	....	...	....	0	398	650	16¼ x 51¾ x 47⅝	⅕	830	....	1,350	...	..

Webster Engineering Co., York Distributor, Does Only Those Installations on Which It Can Do a Good Job

By T. T. Quinn

Webster Engineering Co., York representative in Minneapolis, is a newcomer to air conditioning, having been in business only 15 months. H. P. Webster, proprietor, emphasized that the company is deliberately picking its way, satisfied to learn all it can without being overly aggressive for immediate business of the kind which brings headaches later.

"We're going slow in air conditioning," Mr. Webster said, "and building for the future. We're looking ahead to the air-conditioning business, not as it is today, but as it will be several years from now.

"We are satisfied to lose a few jobs now, rather than put in something we think won't do the job the customer expects it to do. Every job we've put in is one we can point out to prospective customers as one that has been done right. The future of air conditioning, we think, is great enough that we can afford to go slow now, and build up a reputation for reliability that we can depend on to bring us business in years to come.

"We've been close enough to several jobs installed in the Twin Cities to know that every company now in the field won't be able to do that."

Biggest problem facing refrigeration dealers in Minneapolis and St. Paul, Mr. Webster thinks, is that of selling equipment in the face of a plentiful supply of deep well water.

"Apparently this whole section lies in the middle of an immense water basin," he said, "and all that any houseowner has to do, if he wants water for drinking, air conditioning, or other purposes, is to sink a well on his property and get it. With 50° F. water available in this way, it has naturally been used in most air-conditioning jobs installed in this territory up to the present time."

We asked Mr. Webster what he considered the best way to meet such a situation.

"The method we've used, with some success, is to remind prospects who don't own their own homes that if they install an air-conditioning system using refrigerating equipment they'll have something to take with them when they move. Otherwise, we tell them, their investment in refrigerating equipment is lost—for you can't pick up a well and move it from one part of the town to another."

The company does not handle York portable units. Mr. Webster believes unit air conditioners, being package units, cannot operate in all situations as well as jobs which are individually engineered. There are too many variables, he thinks, and a unit that works well in one home or office may be a total flop in another.

While we were in the office, a prospect for such a job came in. A friend of his had recently installed a room cooler, he said, and it was working swell. He thought he'd like to have one like it in his office. Mr. Webster explained that his company did not sell room coolers, and tried to get an appointment for an engineering survey.

But the prospect was sold on a room cooler, and went out to look for a dealer who handled them.

"There's almost a typical interview," he said. "This man is sold on air conditioning, because it's done such a fine job in his friend's office. He wants one, just like it, for his own—and he can't understand why a job which is doing so well in one office shouldn't do just as well in his.

"But there are too many factors that might throw the whole system out of line. His office might have more windows, or larger, or get more of the mid-day and afternoon sun. A system that would hold an even, comfortable temperature in his friend's office might not do anything like that in his own.

"He'll go out now, and probably end up by buying a room cooler of one kind or another. And, if it doesn't work, he'll be soured on 'air conditioning' from now on. He'll think all this temperature regulation talk is a lot of hot air. He'll damn not only air conditioning, but the firm that sold him the room cooler as well.

"That's one reason why we don't handle that type of equipment."

$3,000 Air-Conditioning Order Results from Mailing Piece

MEMPHIS, Tenn.—A $3,000 air-conditioning order from a direct mail campaign has made Reube O. Emery, of the Hughes Heating Co., Westinghouse dealer, an enthusiastic supporter of that form of advertising.

A Chinese who operates two cafes in the city came into the office one day with the mailing piece in his hand and asked for "that man" pointing to the signature on the letter.

The $3,000 order, exclusive of blower, motor, and fan housing, which the buyer had, resulted.

Kennel on Billboard Is Air Conditioned

CHICAGO—There will be no "dog days" for the prize-winning canines who are acting as company salesmen for the Wilson Meat Co., manufacturers of Ideal Dog Food, in their new billboard home, for it is equipped with a $6,000 air-conditioning system, a 30-gal. water tank, blue lighted kennels, and Venetian blinds.

As a result of a novel advertising scheme devised by Thomas E. Wilson, company president, the dogs are put to work selling dog food from a shed whose triangular front projects from the center of a billboard at Delaware Place and Michigan Ave.

Ten dogs, sometimes totaling as much as $10,000 in value, are placed in the pup palace to demonstrate the dog food.

Air conditioning was originally stipulated by the Humane Society and the Chicago Municipal government, and the contract given to General Electric. All lights are turned out at midnight so that the dogs may retire to their individual bedrooms for beauty sleep.

Schaefer's Home Job Consists Mainly of Winter Systems

Twenty two salesmen sell air-conditioning equipment for Harold L. Schaefer, Inc., Sales Manager Riley Whitmore told us. But they don't sell air conditioning alone—they sell everything the company distributes and manufactures. This includes household and commercial refrigeration, and oil burners and furnaces as well.

Mr. Whitmore was in St. Paul the first time we called at the company's Minneapolis headquarters. Second time by we caught him in the office, but he was so busy with prospects that we had only a few minutes conversation with him.

Only One with Summer Cooling

"We've sold as much home air conditioning as anybody else in Minneapolis," Mr. Whitmore said. "But a very little of it has been in the summer cooling phase. Most, practically all of our air-conditioning work has been done on the winter side. When the job is sold, we arrange the system so that summer cooling can be added later, but so far not many people have seen fit to install it.

"Of 45 home conditioning jobs we installed in the last year, only one—and that was in the home of Mr. Schaefer (Harold L. Schaefer, owner of the business)—was a year 'round system, with provision for summer cooling.

Handle Lennox Furnaces

"But," he added, mopping his face with an already damp handkerchief, "if we have a few more days of this kind of weather I wouldn't be surprised to see a lot of summer cooling systems added."

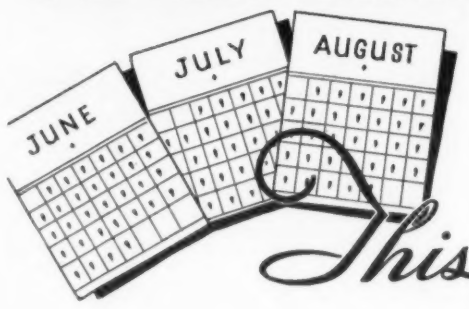
Schaefer's line of winter air conditioner furnaces, manufactured by Lennox Furnace Co., Syracuse, N. Y., is adaptable for either oil, gas, or stoker. Spray, filter, and humidity control instruments are also available for installations where humidity under automatic room control is desired.

Humidistat Control

The humidistat controls the electric water valve and automatically controls relative humidity, just as the thermostat automatically controls temperature. The electric water valve is wired so that when the temperature calls for moisture the valve cannot open unless heat is available in the bonnet. The Schaefer blower, efficient, large, powerful, and quiet, is equipped with rubber mounted self-aligning bearings, which require oiling only a few times a year.

For summer comfort cooling, Schaefer has available a line of air conditioning units of all types and sizes, using either deep well water or refrigerating machines. Curtis compressors, bearing the Schaefer name-plate, are used, and are available in sizes up to 30 tons.

YOUR AIR-CONDITIONING SEASON



This - or this ?

JAN.	FEB.	MAR.	APRIL	MAY	JUNE
JULY	AUG.	SEPT.	OCT.	NOV.	DEC.

THESE are the Golden Harvest days for summer air-conditioning! The season is at its height and there are Real Profits to be made before hot weather departs. But what then?

That's what the far-seeing man is asking himself right now. Will he "retire" from the air-conditioning business? Will he lay off the salesmen he has worked so hard to train? Will he lose contact with all those prospects who were just about ready to go on the dotted line? Will he sit back and watch his Overhead eat up all he has made?

Not if he's handling Corozone!

Corozone Distributors, Dealers and Salesmen will go right on selling, *regardless of season.* Different equipment, yes, but selling more than equipment—selling Comfort and Health! That's a *year-'round business* and Corozone has the equipment to meet practically every air-conditioning need, *12 months of the year.* Compact, Portable, and Effective. No "Engineering," no "come-backs." Amazingly low in price and with Discounts that mean Profits.

In this way Corozone takes the seasonal bugaboo out of Air-Conditioning! Levels out sagging Sales Curves! Spreads out Overhead! Pulls up Profits!

Wire or write for Corozone's Merchandising Plan. It shows how to take advantage of this 5 billion dollar all-year market. How to find and train salesmen. How to find prospects—and *sell them.* How to make money!

Self-contained, portable Room Cooling Units—Commercial Cooling Units . . . for Summer Sale.

Compact, portable, humidifying units . . . for Fall Winter and Spring Sale.

Ionizing units in a variety of models to Purify, Deodorize and Revitalize . . . for Year-'Round Sale.

Price range from $19.75 to $350.00.

Looking Ahead . . .

Right now one of the tasks of Air-Conditioning is to de-humidify (lower the moisture content of the air).

Thousands of Corozone units are doing that today. But the time will come when conditions will be reversed and *more* moisture will be required to provide comfort, to protect furniture, walls and carpets, to reduce fuel bills, and actually to *safeguard Health.*

Corozone has that equipment, too!

Portable, as are all Corozone units; "installed" in an electrical outlet; no ducts, no building alterations.

There are units, in a variety of models that perform a year 'round service of purifying, deodorizing and revitalizing. Because they remove all the dust and pollen from the air, they bring relief to sufferers from hay fever.

MODEL HC HUMIDIFIER

In addition to supplying moisture when needed, it can be used year 'round to purify, filter, deodorize, revitalize and circulate the air.

THE COROZONE AIR CONDITIONING CORPORATION
CLEVELAND, OHIO.

DISTRICT OFFICES

NEW YORK
The Corozone Air Conditioning Corp. of New York
11 West 42nd Street

PHILADELPHIA
Avon Corporation
122 South 22nd Street

SACRAMENTO
Western Air Conditioning Corp.
California-Western States Life Insurance Bldg.

De La Vergne

DeLaVergne Engine Co.
Philadelphia, Pa.

Functions—Cooling, dehumidifying, and cleaning; heating and humidifying optional.

Cabinet—DeLaVergne insulated natural wood cabinet on models AA-1 and AA-1.5; DeLaVergne insulated steel cabinet, finish as desired, on model 101-S.

Compressor—DeLaVergne two-cylinder, air-cooled compressor. Electric compressor control.

Blower—Multivane blower. Direct drive.

Air Circulation—Air intake in right side. Air discharge in top. Fresh air intake provided. Special DeLaVergne discharge grille.

Cooling System—Direct expansion. Special DeLaVergne copper cooling coils. Reverse refrigeration for heating optional.

Heating System—Special DeLaVergne copper heating coils. Coils cannot be used with hot water.

Air Cleaning Medium—Filter on models AA-1 and AA-1.5; Arco filter on model 101-S.

Self Contained

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	COMPRESSOR Bore & Stroke	Speed R.p.m.	Motor Hp.	Input Watts	Heat Capac. B.t.u.	Humidification Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
AA-1	$.....	250	250	4,000	8,000	12,000	Freon	6	1¾ x 1 1/16	1,750	1½	2,000	...	...	1,200	1,300	49 x 58 x 22	¼	1,150	11 & 9½	400	300	500
AA-1.5	.....	250	250	6,000	12,000	18,000	Freon	6	1¾ x 1½	1,750	2	2,500	...	...	1,200	1,300	49 x 58 x 22	½	1,750	11 & 9½	600	450	800
101-S	.....	200	250	4,000	8,000	12,000	Freon	6	1¾ x 1 1/16	1,750	1½	1,700	...	...	750	800	39 x 47 x 17	¼	1,150	9½ & 9½	400	300	500

Electrol

Electrol, Inc., Clifton, N. J.

Functions—Cooling, dehumidifying, and cleaning.

Cabinet—Insulated wood cabinet, walnut finish.

Compressor—Two-cylinder, water-cooled compressor. Delco capacitor motor. High side safety cutout.

Air Circulation—Air intake in rear; air discharge in front. No fresh air intake.

Self-Contained

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	COMPRESSOR Bore & Stroke	Speed R.p.m.	Motor Hp.	Input Watts	Heat Capac. B.t.u.	Humidification Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
RC-1	$.....	...	...	1,330	1,628	2985	Freon	...	1⅛ x 1¼	650	¼	...	0	0	...	280	34 x 36 x 18	...	...	10	520	470	...
RC-2	.....	...	...	3,330	3,834	7,164	Freon	...	1.64 x 1⅝	500	.4	...	0	0	...	335	34 x 36 x 18	...	...	12	575	520	...

Fairbanks-Morse

Fairbanks-Morse & Co.
Chicago, Ill.

Functions — Self-contained type: cooling, dehumidifying, and cleaning. Remote floor type: heating, cooling, humidifying, dehumidifying, and cleaning. Suspended type: cooling, dehumidifying, and cleaning. Duct type: heating, cooling, humidifying, dehumidifying, and cleaning.

Cabinet — Self-contained, remote floor, and suspended types: F-M insulated steel cabinet, finish optional grained or pastel. Duct type: F-M insulated steel cabinets, wrinkle finish.

Blower—Self-contained and remote floor types: F-M centrifugal blower. F-M motor. Direct drive. Suspended type: model 715, aphonic type blower, F-M motor, direct drive; models 736 and 824, F-M centrifugal blower, F-M motor, direct drive. Duct type: F-M centrifugal blower. F-M motor. V-belt drive.

Air Circulation—Self-contained type: air intake in side, discharge in top. Fresh air intake provided. Uni-flo discharge grille. Remote floor type: air intake in back, discharge in top. Fresh air intake and Uni-flo discharge grille on 612 and 624. F-M discharge grille on 4420. Suspended type: air intake in back on 715 and 736, front on 824; discharge in front. No fresh air intake. Uni-flo discharge grille.

Cooling System — Self-contained type: direct expansion. All other models: direct expansion and circulating cold water. Copper cooling coils on all but model 4420, which are cast.

Heating System—Copper cooling coils on all but 4420, cast. Coils may be used with hot water. Heating capacities—model 612, 16,000; 624, 31,400; 760, 133,000; H-1000, 295,000; H-2000, 455,000; V-1000, 295,000; V-2000, 455,000.

Air Cleaning Medium—Dustop filter.

Self-Contained Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	COMPRESSOR Bore & Stroke	Speed R.p.m.	Motor Hp.	Input Watts	Heat Capac. B.t.u.	Humidification Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
6100	$550.00	...	0	3,650	6,350	10,000	Freon	4	1⅝ x 1⅝	310	...	775	0	0	487	...	38 x 18 x 45	⅛	1,080	6	900	600	200

Remote Floor Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
612	$184.50	...	...	4,750	7,250	12,000	Freon	...	3,500	6,500	10,000	2.5	...	...	...	175	25¼ x 38 x 14½	1/10	1,060	(2) 4½	400	300	80
624	250.00	...	...	11,250	17,750	29,000	or	...	10,000	17,500	27,500	5.4	...	...	...	275	30⅜ x 41 x 20	¼	750	(2) 9	900	400	..
4420	.....	...	...	....	....	....	Water	...	....	....	....	...	...	...	...	...	.....	..	...	(2) ..	...	...	..
Suspended Type																							
715	$172.50	...	...	6,840	11,160	18,000	F-12	...	8,500	14,700	23,200	4.7	...	0	...	155	21 x 21 x 26½	1/15	1,140	14	775	400	..
736	355.00	...	...	15,050	22,450	37,500	F-12	...	15,500	26,700	42,200	6.6	...	0	...	300	19½ x 28½ x 30½	..	...	(2) 9	1,150	300	..
825	265.00	...	...	11,250	17,750	29,000	F-12	...	10,000	17,500	27,500	5.4	...	0	...	270	33 x 32 x 19½	..	750	(2) 9	920	400	..
Duct Type																							
760	$450.00†	...	...	33,900	48,850	81,750	Freon	...	....	....	....	...	...	...	...	400	25½ x 32½ x 38½	¾	870	(1) ..	1,875	500	..
V-1000 ...	983.00†	...	...	80,500	115,500	196,000	or	...	....	....	....	...	...	...	...	1,000	71½ x 68½ x 44½	2	970	(2) ..	4,200	500	..
V-2000 ...	1,231.00†	...	...	123,500	177,500	301,000	Water	...	....	....	....	...	...	...	...	1,500	77½ x 79 x 48	3	721	(2) ..	6,500	500	..
H-1000 ...	1,080.00†	...	...	80,500	115,500	196,000		...	....	....	....	...	...	...	...	1,000	25½ x 70 x 63½	2	970	(2) ..	4,200	500	..
H-2000 ...	1,246.00†	...	...	123,500	177,500	301,000		...	....	....	....	...	...	...	...	1,500	30½ x 78½ x 63¼	3	721	(2) ..	6,500	500	..

†Prices for low side only.

General Electric

General Electric Co.
Air Conditioning Dept.
Bloomfield, N. J.

Functions — Self-contained type: model FC-1, cooling and dehumidifying; FC-2, cooling, dehumidifying, and cleaning; FR-1, heating, cooling, humidifying, dehumidifying, and cleaning. Remote floor type: models AG-1 and AG-2, cooling and dehumidifying; AD-3 and AD-4, heating, cooling, humidifying, dehumidifying, and cleaning. Suspended type: models AG-4 and AG-10, cooling and dehumidifying; AG-12, AG-14, and AG-15, cooling, dehumidifying, and cleaning. Duct type: heating, cooling, humidifying, dehumidifying, and cleaning.

Cabinet—Self-contained type: models FC-1 and FR-1, insulated steel cabinet, walnut finish. FC-2 insulated wood cabinet, walnut veneer finish. Remote floor type: not insulated, cold-rolled sheet steel cabinets, walnut finish. Suspended and duct types: not insulated, cold-rolled sheet steel cabinet, walnut two-tone gray finish.

Compressor — Self-contained type: models FC-1 and FR-1, G-E two-cylinder water-cooled compressor; model FC-2, G-E single-cylinder air-cooled compressor. G-E single-phase repulsion-induction motor. G-E magnetic across-the-line starter. High side safety cut-out. Head pressure cut-out, and suction pressure control.

Blower—Self-contained type: FC-1, G-E aphonic pressure propeller type; FC-2 and FR-1, two centrifugal fans. G-E motors, type KH on model FC-2. Direct drive. Remote floor type: models AD-3 and AD-4, centrifugal type. Direct-drive G-E capacitor motor; models AG-1 and AG-2, G-E aphonic pressure propeller. G-E resistance split-phase motors, direct drive. Suspended type: models AG-4 and AG-10, centrifugal type. G-E capacitor motor, direct drive; models AG-12, AG-14, and AG-15, G-E aphonic pressure propeller. G-E resistance phase motor, direct drive. Duct type: G-E centrifugal multiblade blower, G-E motors, belt drive.

Air Circulation—Self-contained type: air intake in side; discharge in top on FC-1 and FC-2, in front on FR-1. Fresh air intake provided on models FC-2 and FR-1. G-E grille on FC-1, G-E louvres on FC-2, G-E adjustable louvres on FR-1. Remote floor type: air intake in side, discharge in front. Fresh air intake on AD-3 and AD-4. G-E adjustable louvres on AD-3 and AD-4; non-adjustable grille on AG-1 and AG-2. Suspended type: air intake in side on AG-4 and AG-10, rear on AG-12, AG-14, and AG-15; discharge in front. No fresh air intake. Non-adjustable grille. Duct type: air intake in rear, discharge on three sides at top in model AA-3, on two sides at top in AA-4, in front end on HD models. Fresh air intake provided on all models.

Cooling System—Self-contained type: direct expansion. Remote floor type and suspended type: direct expansion, circulating cold water optional. Duct type: direct expansion on AA-3 and AA-4, direct expansion or circulating cold water on HD models. G-E copper cooling coils on all models.

Heating System—G-E copper coils, can be used with hot water. Heating capacities, model FR-1, 11,500 B.t.u.; AD-3 11,500; AD-4, 21,000; AA-3, 130,000; AA-4, 260,000; HD-1, 70,000 to 80,000; HD-100, 62,000 to 88,000; HD-200, 61,000 to 135,000; HD-300, 175,000 to 270,000; HD-400, 186,000 to 405,000; HD-500, 346,000 to 528,000; HD-600, 519,000 to 792,000; HD-700, 692,000 to 1,056,000.

Type of Humidifier—Self-contained and remote floor types: open pan. Duct type: screen drip.

Air Cleaning Medium — Viscous coated glass wool filter.

Controls—Self-contained type: thermostatic expansion valve; water regulating valve on FC-1 and FR-1. Remote floor and suspended types: thermostatic expansion valve. Duct type: thermostatic expansion valve; humidistat on AA-3 and AA-4.

Self-Contained

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	COMPRESSOR Bore & Stroke	Speed R.p.m.	Motor Hp.	Input Watts	Heat Capac. B.t.u.	Humidification Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
FC-1	400.00	29.8	0	1,850†	2,800†	4,650†	Freon	3½	2 x 1½	400	½	800‡	0	0	500	625	37¼ x 40½ x 13⅞	1/60	1,400	7	200	...	¶
FC-2	435.00	...	0	1,450†	4,150†	5,500†	Freon	(3) ¼	1¼ x .86	1,725	(3) ⅛	1,240‡	0	0	600	725	47 x 49¾ x 19¾	1/6	1,725	6	275	...	¶
FR-1	550.00	46.0	...	3,200†	5,100†	8,350†	Freon	5½	2 x 2½	390	1	1,300‡	11,500	1.8	523	650	39¼ x 63 x 14⅜	1/60	820	6	200	...	¶

†Capacity of model FC-1, figured at 32° refrigerant temperature, model FC-2, 42°, and model FR-1, 28° F. refrigerant balance point. ‡Total including blowers. ¶See compressor for total for unit.

Remote Floor Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification* Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
AD-3 ...	$295.00	46.0	15.0	1,820	3,830	5,650	Freon†	...	2,850	4,750	7,600	...	...	1.8	175	225	39¼ x 36⅝ x 14⅜	1/60	820	6	200	...	100
AD-4	385.00	78.0	29.2	3,560	8,360	11,920	Freon†	...	5,200	9,800	15,000	...	...	3.0	275	325	39¼ x 50⅝ x 14⅜	1/30	820	6	450	...	100
AG-1	175.00	40.0	0	....	....	5,880	Freon†	...	2,500	5,500	8,000	...	...	0	81	111	31½ x 31 x 17½	1/100	800	10	475	...	...
AG-2	200.00	80.0	0	3,630	8,130	11,760	Freon†	...	5,700	10,200	15,900	...	...	0	98	128	31½ x 31 x 17½	1/100	800	10	475	...	38

*City water temperature. †Freon used for ratings.

Suspended Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification* Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
AG-4	$195.00	80.0	0	3,630	8,130	11,760	Freon	...	5,700	10,200	15,900	...	...	...	100	130	24⅛ x 29½ x 16⅞	1/100	800	10	475	...	38
AG-10	215.00	85.0	0	4,180	9,320	13,500	Freon	...	6,700	11,300	18,000	...	...	...	120	145	23⅝ x 28⅞ x 16⅞	⅛	1,140	10	650	...	120
AG-12	330.00	156.0	0	8,000	15,000	23,000	Freon	...	....	....	....	...	...	...	360	400	26 x 43⅛ x 29⅛	⅛	1,140	14	1,000	...	170
AG-14	330.00	...	0	9,320	16,680	26,000	Freon	...	....	....	....	...	...	...	250	300	22 x 38 x 24	1/10	1,140	14	1,000	...	170
AG-15	410.00	234	0	13,300	28,000	41,300	Freon	...	....	....	....	...	...	...	450	500	37⅛ x 43⅛ x 29⅛	⅛	1,140	19½	2,200	...	220

Duct Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification* Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
AA-3	$ 620.00†	...	185	11,300	24,500	35,800	F-12	...	....	....	....	...	...	12.5	495	606	81¾ x 28⅞ x 32¾	⅛	1,725	12¼	1,600	...	195
AA-4	1,155.00†	...	370	22,600	49,000	71,600	F-12	...	....	....	....	...	...	25.0	990	1,220	81¾ x 54⅜ x 32¾	¼	1,725	12¼	3,200	...	370
HD-1	‡	...	...	....	....	19,200	F-12	...	....	....	....	...	...	3.0	500	600	18⅞ x 42⅞ x 54¾	⅛ to ¼	825 to 890	9	850 to 1,000	...	...

*Water at tap temperature. †Prices quoted are for the year-round unit. ‡Prices vary with size and type of installation.

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	DIRECT Refrig. Capacity —Total B.t.u.—	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification* Lbs./hr.	WEIGHT Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Input Watts
HD-100	‡	...	...	22,000 to 45,000	Freon	...	....	....	....	...	...	6	750 to 900	22 x 42¼ x 42⅞ ¶	**	...	**	900 to 1,500	..
HD-200	‡	...	...	29,000 to 67,000	Freon	...	....	....	....	...	...	9	1,100 to 1,300	28 x 42¼ x 63⅝ ¶	**	...	**	1,200 to 2,400	..
HD-300	‡	...	...	58,000 to 130,000	Freon	...	....	....	....	...	...	18	1,500 to 1,900	28 x 70¼ x 70⅝ ¶	**	...	**	2,400 to 4,800	..
HD-400	‡	...	...	89,000 to 205,000	Freon	...	....	....	....	...	...	27	1,500 to 1,900	67 x 42⅜ x 71½	**	...	**	3,660 to 7,320	..
HD-500	‡	...	...	115,000 to 258,000	Freon	...	....	....	....	...	...	36	2,000 to 2,600	47½ x 70⅜ x 71½	**	...	**	4,700 to 9,400	..
HD-600	‡	...	...	172,000 to 397,000	Freon	...	....	....	....	...	...	54	2,300 to 3,200	67 x 70⅜ x 71½	**	...	**	7,080 to 14,160	..
HD-700	‡	...	...	230,000 to 528,000	Freon	...	....	....	....	...	...	72	2,600 to 3,800	86½ x 70⅜ x 71½	**	...	**	9,420 to 18,840	..

*Water at tap temperature. ‡Prices vary with size and type of installation. **Blowers on HD models use motors varying from ⅓ to 7½ hp., diameter from 7 to 40 in. ¶On these three models, depth varies. Minimum given. Maximum is 56⅞, 90⅝, and 97⅝, respectively.

Air Conditioning

Edgewater Beach Hotel Grill, Famed as Chicago's 'Coolest Spot', Air Conditioned With Peerless Cooling Equipment

CHICAGO — Known as Chicago's coolest spot because of its location on the shores of Lake Michigan, Edgewater Beach Hotel here made a bid to maintain its reputation with the installation of air-conditioning systems in its grill and unique cocktail lounge, "The Yacht Club."

Sales and installation were made by the National Korrect Air Co. of Chicago, under the engineering direction of Carl Eichstaedt of that company.

The Yacht Club cocktail lounge, built to resemble the deck of an ocean liner, needed 50 tons air-conditioning equipment to maintain its ocean-breeze atmosphere. One 15-ton Peerless coil powered by a Curtis FWH-1500-AC compressor supplies the cooling.

Scenery on either side of the lounge, painted to simulate water, moves up and down to the accompaniment of the noise of waves crashing against the bow. Two life boats swung over the side add to the realism of this reproduction of a steamer deck.

Problems of cigarette and cigar smoke and a high latent heat load due to intense crowding were troublesome in this room. Concealing the outlets also required ingenuity because of the unusual plan.

The grill room is equipped with 40 tons capacity Peerless air-conditioning coils powered by one Curtis FWH-1000-AC and two FWH-1500-AC compressors, zone controlled and equipped with leak alarms.

Cooling units themselves are National Korrect Air cabinet type units, one equipped with a 15-ton Peerless coil and another with one 10-ton and one 15-ton coil.

Air units and duct work were all installed on the roof so that the use of the grill room was not interrupted at any time during the installation, and proper air distribution was secured in spite of the low ceilings and numerous arches.

Ducts are covered with waterproofed Balsam wool insulation and lined inside with sound absorbent. These ducts discharge into the cooling space through 26 outlets. Horizontal projection from the opening is secured by special diffusion boxes.

All duct bends are square turns with Uniflo duct turn cores, and each outlet is equipped with special adjustable proportioners with Uniflo cores to permit the extraction of the proper amount of air from each outlet. Heat tempering coils for winter operation have also been installed in each air cabinet.

Fifty per cent fresh air is introduced through filters into these units, and 50% of the return air is recirculated.

In spite of a heavy sun load caused by glass walls on three sides of the room, a zone control system maintains temperatures at a variance of only 1°, the installers claim.

In the morning, the sun comes in from the southeast and the zone control places the heaviest load on machine No. 1; in the early afternoon the sun enters the southwest windows throwing the heaviest load on machine No. 2; and in the later afternoon the sun, entering from the northwest, throws the heaviest load on the third machine. A large number of outlets allows the use of only 16° diffusion temperature difference, and cooling is effected without drafts, the engineers say.

Servel Conditioner Bought For Publishers Office

ELGIN, Ill.—D. C. Cook Publishing Co. recently purchased air-conditioning equipment for the private office of E. E. Stewart, president, reports A. C. Juby & Son, Inc., Servel distributor in this territory.

Equipment includes a model ACFD-101 air-conditioning unit, connected to a model WAD-150 machine.

Philadelphia Utility Sponsors Display on Air Conditioning

PHILADELPHIA—To assist manufacturers and dealers in selling air conditioning, Philadelphia Electric Co. recently maintained an exhibit of small commercial units and room coolers in its main showroom, which tied in with its promotional material "On Ducking the Weather."

Each air-conditioning dealer was invited to exhibit his equipment for a week.

A retail sales representative from the utility, and if the company chose, one from the dealer, was on hand to explain the units.

To each customer inquiring about the exhibit was given a special domestic booklet, "On Ducking the Weather," issued by the utility, and the dealer's literature. Kelvinator, Westinghouse, York, and Carrier exhibited.

This work supplanted the canvassing, because the utility felt that the domestic and small commercial customer requires more promotional effort than the large industrial customer, according to William S. Hodgkinson, retail sales air-conditioning specialist.

Daily Sales Increase after Omaha Store Installs Air Conditioning

OMAHA—Air conditioning for increased drug sales is the recipe offered by Howard Drug Co. here whose cool store connotes fresh, pure drugs to its patrons.

The first three months after Howard Drug Co. opened, business was divided approximately 50-50 between lunch counter and drug receipts.

After one installation of an 8-hp. machine unit with 7½ tons refrigerating capacity the number of patrons doubled.

Of these extra, 60% become patrons of the drug department, and 60% of the gain in receipts was likewise credited to the sale of drugs.

The increase in the lunch business was noticeable particularly in the size of the checks; customers stayed longer and ate and drank more than before the air was cooled, the owner reports.

Trane Resumes 6-Month's Training Course In Air Conditioning for Students

By T. T. Quinn

LA CROSSE, Wis.—After a lapse of five years, Trane Co. has resumed its six-months' course of training in air conditioning, heating, and business administration for a group of picked engineering graduates who are to act as its sales representatives in the 62 Trane branches throughout the country.

The course, which was resumed early in July, was written especially for the company by W. G. Goodman, air-conditioning engineer and a member of the Trane organization. Classes are limited to an average of 10 men, and are held on Monday, Wednesday, and Friday nights each week from June to December.

During the day, the students are assigned to positions in various sections of the Trane factory and offices. They act only as observers, and are not considered regular members of the company's home organization.

Classes are first held in the cooling functions of air conditioning. This section of the course is dealt with by R. H. Anderegg, chief air-conditioning engineer, and lasts for a period of seven weeks.

Study Air Conditioning

Next four weeks are spent in the study of residential heating and air conditioning, under the tutelage of D. C. Minard, vice president of the company in charge of heating operation.

During the next four weeks, the students study drafting under the direction of H. N. Stephenson, after which three weeks are spent in the laboratory, investigating experimental and engineering problems under the guidance of M. W. Miller, experimental engineer.

Next four weeks of the students' course is spent studying factory conditions, the first week in Factory No. 1, where Trane's line of heating specialities is manufactured, and the next three in Factory No. 2, in which manufacture of heating and air-conditioning equipment is concentrated.

This section of the course acquaints the future Trane salesman with the company's entire line of products, their uses, and their methods of manufacture. The students do none of the actual production work—their job is only to study and observe.

After completing their study of factory production methods, the students are given a week of information concerning operation of the advertising department, under the supervision of Advertising Manager L. A. Trumble.

The week following, the operation of blast heaters is studied—including all types of heating coils and their functions—with R. E. Lucey as their instructor. For their final week in the school, the students study the operation and principle of unit heaters, under the direction of N. O. Downey.

After their instruction work is completed, the students are ready to go out, as sales representatives, to the 62 Trane branch offices in various parts of the country.

Current crop of students are recruits from colleges scattered all over the country, some of whom left positions paying considerably more in order to avail themselves of this training and the opportunity that goes with it.

Does Not Insure Employment

Acceptance as a student does not imply employment as a Trane representative, an official took pains to point out. As the course progresses, several students are discovered to have little aptitude for sales work—others are found to lean more to the strict engineering side, or to experimental work.

Those whose aptitude is found to be for neither sales or engineering work are released on completion of the course. The others are absorbed into the Trane organization in the spots where their particular talents will have best opportunity to flower.

Resumption of the course this year, it was explained, follows four or five years lapse due to economic conditions. Having found the employment of men untrained in its methods to be unsatisfactory, the company decided, with the advent of better times, to take up the training work again.

Conduct of the course with a limited number of carefully selected students, it is believed, will enable the Trane field organization to keep at top efficiency at all times through the influx of young, competently-trained men at regular intervals. The men will work both directly with prospects and in cooperation with regular Trane distributors, a large majority of whom are heating and air-conditioning contractors.

AIR CONDITIONING in the R-A-C-I SHOPS

Keeping in Step With the Industry's Need for Dependable Trained Men

Air Conditioning is a reality in the Shops of the Refrigeration and Air Conditioning Institute—a practical working reality. Here students polish off their training and learn air conditioning applications, installations and operation on the most modern equipment. In these great R-A-C-I Shops are located refrigeration and air conditioning apparatus valued at more than $35,000.00—all of it used to train men for useful and dependable service.

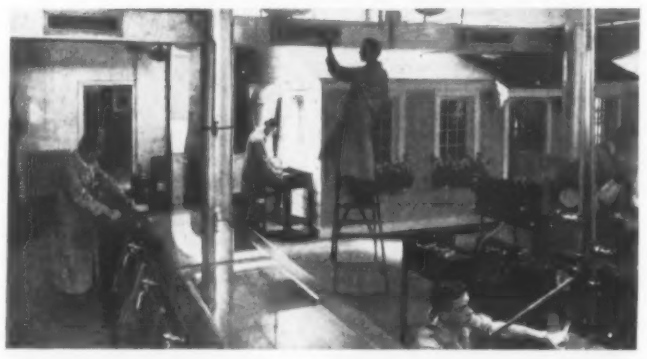
R-A-C-I Trained men know Air Conditioning as the employers in the industry want them to know it. Every step of their Training has been conducted with the cooperation of the industry's leading manufacturers. More than 50 of these concerns have "officially" endorsed the Training, and are recommending it. Among them they have appointed their own engineers and executives to supervise it. Under the supervision of these men, who compose the Institute's Board of Governors, every man who holds an R-A-C-I diploma is trained exactly as the industry wants him trained.

You will make no mistake when you employ an R-A-C-I Trained man for either household or commercial refrigeration, or air conditioning work. More than 800 hours of intensive guided study in his own home has given him a thorough understanding of the principles involved in his work, and a broad knowledge of what you want him to do. Another 100 hours of unusually practical training on actual apparatus, under competent instructors, has given him a skill and an ability that you can use to great advantage in your business. He is a man on whom you can depend and build for the future.

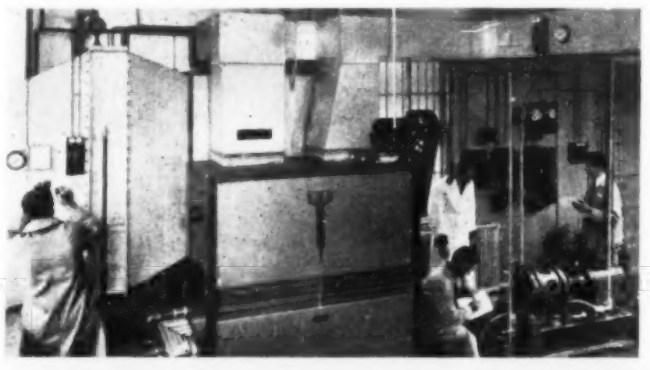
With the exception of the two weeks shop training in Chicago, R-A-C-I Training can be completed by the average mechanically minded man in his own home, without interfering with other employment. For the shop training the Institute supplies transportation from the student's home to Chicago and return, and all necessary tools for shop use.

Ambitious men—employers everywhere—who may be interested in learning more about the R-A-C-I Training Program, write for details. No obligation, of course.

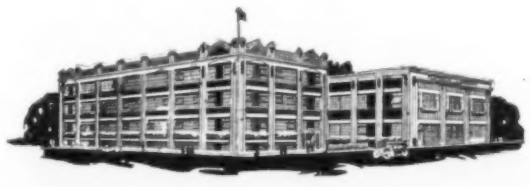
An Air Conditioned House Within an Air Conditioned Building



Above: Part of commercial refrigeration shop with year round air conditioned bungalow in background. Note conditioning equipment at left and distribution ducts of principal system above. Below: Large installation furnishing "outside conditions" for bungalow and year round conditioned air for entire second floor of Shops.



Officially Endorsed by 50 Leading Manufacturers



Supervised by Industry Appointed Engineers

Refrigeration and Air Conditioning Institute
2130-2158 Lawrence Avenue, Chicago

Fedders

Fedders Mfg. Co., Inc.
Buffalo, N. Y.

Functions—Cooling and dehumidifying.

Cabinet—Suspended type: Fedders brass cabinet, electro-tin plated, insulated.

Blower—Self-contained type: Schwitzer-Cummins propeller-type blower, G-E and Westinghouse motors, direct connected.

Air Circulation—Suspended type: air intake in rear, discharge in front, no fresh air intake except as provided.

Cooling System—Fedders all-copper cooling coils.

Suspended Type

Model No.	Price†	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification Lbs./hr.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
212	$114.00	47	0	....	....	....	SO_2 or	...	.....	...	...	...	...	0	44	68	14 x 15¾ x 15¾	1/30	1,150	12	786	714	65
216	139.00	83	0	....	....	....	CH_3Cl	...	.....	...	...	...	...	0	77	113	19¼ x 19⅜ x 18⅞	1/20	850	16	1,228	607	90
316	149.00	125	0	....	....	....	or Freon	...	.....	...	...	...	...	0	86	126	19¼ x 19⅜ x 20⅜	1/20	850	16	1,190	588	90
318	218.00	215	0	....	....	....		...	.....	...	...	...	...	0 .	162	234	24⅜ x 23⅝ x 26¼	1/15	860	18	1,852	658	116
Duct Type																							
15-V	$.....	30.4	0	3,148	4,517	7,665	Freon	...	.....	...	...	...	...	0	31.8	...	9⅛ x 15⅛ x 8⅞	...	...	..	207	500	...
35-V	.....	105.3	0	10,830	15,480	26,310	Freon	...	.....	...	...	...	...	0	91.6	...	18⅛ x 22 x 10⅛	...	...	..	710	500	...
301-V	.....	441.0	0	89,900	179,000	268,900	Freon	...	.....	...	...	...	...	0	275.0	...	67¼ x 85⅛ x 8½	...	...	..	16,000	500	...
753-V	.....	1,633.0	0	220,200	329,200	549,400	Freon	...	.....	...	...	...	...	0	1,063.0	...	75¼ x 102⅜ x 8¼	...	...	..	18,450	500	...
1005-V	.....	2,730.0	0	281,560	399,900	681,550	Freon	...	.....	...	...	...	...	0	1,635.0	...	80 x 88¾ x 16½	...	...	..	18,250	500	...

†Price includes thermostatic expansion valve, hanger brackets, and 60-cycle, 110-volt, single-phase, constant-speed motor.

Ilg

Ilg Electric Ventilating Co.
Chicago, Ill.

Functions—Self-contained models: cooling, dehumidifying, and optional cleaning. Remote floor type: heating, cooling, humidifying, dehumidifying, and cleaning. Suspended type: cooling and dehumidifying.

Cabinets—Self-contained: model 11, steel cabinet; model 30, wood cabinet. Burled-walnut finish. Cabinets insulated. Remote type: steel cabinet, burled-walnut finish. Suspended type: Ilg steel cabinet, ivory finish, not insulated.

Compressor—Two cylinders; model 11, water cooled; model 30, air cooled. Manual control.

Blowers—Self-contained: Ilg blower, with Ilg direct-drive motor. Remote type: Ilg twin-centrifugal multivane blower with Ilg direct-drive motor. Suspended type: propeller fan blower, with Ilg shaded-pole motor on 135-CU; Ilg capacitor motor on all others. Direct drive.

Air Circulation—Self-contained: air intake in back, discharge in front; no fresh air intake. Remote type: air intake in lower front, discharge in top; no fresh air intake; directional discharge grille. Suspended type: intake in rear, discharge in front; no fresh air intake.

Cooling System—Direct expansion. Ilg copper cooling coils.

Heating System—Ilg copper coils, can be used with hot water. Heating capacity: model 500-RC, 45,800 B.t.u.

Air Cleaning Medium—Filter.

Controls—Thermostatic expansion valve on model 500-RC; thermostatic expansion valve and water-regulating valve on models 11 and 30; thermostatic expansion valve on suspended units.

Special Features—Self-contained type: rotatable circular directional discharge grille, water-cooled motor. Suspended type: circular directional discharge grille.

Self-Contained

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	COMPRESSOR Bore & Stroke	Speed R.p.m.	Motor Hp.	Input Watts	Heat Capac. B.t.u.	Humidification Lbs./hr.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
11	$.....	92	0	....	....	6,000	Freon	6	1 13/16 x 1⅜	...	½	600	0	0	350	...	43 x 29¼ x 18½	1/40	1,140	10	300	550	...
30	.....	92	0	....	....	7,200	Freon	6	1 13/16 x 1⅜	...	1	1,000	0	0	350	...	43 x 29¼ x 22	1/40	1,140	10	300	550	...

Remote Floor Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification Lbs./hr.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
500-RC	$.....	83.3	83.3	3,340	6,450	9,790	Freon or CH_3Cl	...	....	....	....	...	...	...	...	...	33 x 32 x 14	1/16	¶	(2) 6	500	375	115

Suspended Type

135-CU	$.....	59	0	4,000†	7,750†	11,750†	Freon or	...	....	....	....	...	...	0	150	...	21¼ x 21¼ x 12	1/20	855‡	13	600‡	490‡	...
175-CU	.....	85	0	7,100	13,800	20,900	CH_3Cl	...	....	....	....	...	...	0	190	...	24¼ x 24¼ x 12	⅛	855	16	1,220	690	...
195-CU	.....	115	0	10,300	20,100	30,400	or	...	....	....	....	...	...	0	240	...	27¼ x 27¼ x 12	⅛	855	19	1,970	820	...
255-CU	.....	190	0	15,100	29,400	44,500	Water	...	....	....	....	...	...	0	320	...	34¼ x 34¼ x 12	⅓	685	25	2,500	630	...

†Ratings given with blower speeds of 855 r.p.m. Ratings at 1,140 r.p.m. are 4,750 B.t.u. dehumidification, 9,350 B.t.u. sensible heat, 14,100 B.t.u. total. ‡Also operates at 1,140 r.p.m., giving 810 c.f.m. and 660 f.p.m. ¶Three speeds, 1,140, 850, and 690 r.p.m.

Kauffman

Kauffman Air Conditioning Corp.
St. Louis, Mo.

Functions—Self-contained type: cooling, dehumidifying, and cleaning. Remote floor type: heating, cooling, humidifying, dehumidifying, and cleaning. Suspended type: cooling and dehumidifying. Suspended or duct type, and duct type: heating, cooling, humidifying, dehumidifying, and heating.

Cabinets—Self-contained, remote floor, and suspended types: Kauffman insulated steel cabinet, walnut finish. Suspended or duct and duct types: insulated steel cabinet, brown finish.

Compressor—Self-contained type: Kauffman two-cylinder compressor, air cooled in Model A, water cooled in models F, I, K, and L. Baldor motor, Cutler Hammer motor starter. Detroit high side safety cut out.

Blower—Self-contained type: models A, F, and I, Kauffman multiblade blower; models K and L, disc-type blower. Baldor motor. Belt drive on Model A. Direct drive on other models. Remote floor type: Kauffman multiblade blower. Direct drive. Suspended type: Torrington blower. Baldor motor. Direct drive. Suspended or duct type: Kauffman multiblade blower. Baldor motor. Belt drive.

Air Circulation—Self-contained type: air intake in rear, discharge in top. Fresh air intake on model A only. Kauffman directional grille. Remote floor type: air intake in bottom, discharge in top. Fresh air intake optional. Kauffman discharge grille. Suspended type: air intake in rear, discharge in front. Kauffman discharge grille. Suspended or duct type: air intake in rear, discharge in front. Fresh air intake provided. Kauffman directional discharge grille. Duct type: air intake in bottom, discharge in top, fresh air intake provided. Kauffman discharge grille.

Cooling System—Self-contained type: direct expansion. Kauffman copper cooling coils. All other types: direct expansion or circulating cold water. Kauffman copper cooling coils.

Heating System—Kauffman copper coils, can be used with hot water. Heating capacities: model G, 38,000; H, 47,000; M, 63,000; N, 120,000; O, 124,000; P, 162,000; 62H, 66,000; 75-H, 104,000; 76H, 140,000; 92H, 208,000; 93H, 312,000; 94H, 388,000; 122H, 388,000; 62V, 66,000; 75V, 104,000; 76V, 140,000; 92V, 208,000; 93V, 312,000; 94V, 388,000; 122V, 388,000.

Type of Humidifier—Spray.

Air Cleaning Medium—Kauffman filter.

Controls—Self-contained type; automatic expansion valve. Remote floor type: Detroit Lubricator thermostatic expansion valve, and humidistat. Suspended or duct type and duct type: thermostatic expansion valve, humidistat, and thermostat.

Self-Contained Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	COMPRESSOR Bore & Stroke	Speed R.p.m.	Motor Hp.	Input Watts†	Heat Capac. B.t.u.	Humidification* Lbs./hr.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
A	$400.00	45	0	5,600	3,000	8,600	Freon	4	1⅝ x 1⅝	425	¾	750	0	0	360	435	38 x 33 x 16	..	750	9	275	250	‡
F	400.00	35	0	4,100	2,700	6,800	Freon	4	1⅝ x 1⅝	425	¾	750	0	0	375	450	38 x 30 x 15	1/20	1,140	(2) 4½	275	250	‡
I	550.00	60	0	8,000	4,000	12,000	Freon	6½	1⅞ x 1⅞	600	1	1,000	0	0	460	550	45 x 32 x 17	1/20	1,140	(2) 6	550	250	‡
K	300.00	35	0	4,100	2,700	6,800	Freon	4	1⅝ x 1⅝	425	¾	650	0	0	350	425	36 x 32 x 15	1/40	1,400	10	275	250	‡
L	475.00	60	0	8,000	4,000	12,000	Freon	6½	1⅞ x 1⅞	600	1	1,000	0	0	450	535	43 x 33 x 17	1/40	1,400	12	550	250	‡

Remote Floor Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind¶	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification* Lbs./hr.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
G	$285.00	...	...	...	...	23,400	Freon	...	....	....	....	12	....	...	370	...	36 x 31½ x 14	1/20	850	(2) 7	500	300	...
H	264.00	...	...	...	...	23,520	Freon	...	....	....	....	12	....	...	334	...	26½ x 41 x 12½	1/20	1,140	(2) 6	500	300	...
M	378.00	...	...	...	...	31,700	Freon	...	....	....	....	12	....	...	380	...	27½ x 49 x 14	1/10	850	(2) 7	900	300	...
N	449.00	...	...	...	...	60,500	Freon	...	....	....	....	25	....	...	535	...	31 x 54 x 17	1/8	850	(2) 8	1,300	300	...
O	560.00	...	...	...	...	62,600	Freon	...	....	....	....	30	....	...	720	...	31 x 70 x 17	1/6	850	(2) 9	1,500	300	...
P	620.00	...	...	...	...	81,700	Freon	...	....	....	....	30	....	...	890	...	34 x 74 x 20	1/2	850	(2) 10	1,800	300	...

Suspended Type

12-B	$.....	...	0	....	....	22,800	Freon	...	....	....	....	7	...	0	...	115	19 x 19 x 18	1/30	1,140	12	500	...	...
16-B	.....	...	0	....	....	38,400	or	...	....	....	....	10	...	0	...	165	24 x 24 x 20	1/20	850	16	1,000	...	...
21-B	.....	...	0	....	....	69,000	Water	...	....	....	....	12	...	0	...	205	29 x 29 x 25	1/10	850	21	1,500	...	...

Suspended or Duct Type

62-H	$324.00	....	....	....	....	46,600	...	...	....	....	....	14	....	..	...	550	16 x 33 x 33	1/10	850	(2) 6	800	...	..
75-H	440.00	....	....	....	....	62,400	...	...	....	....	....	20	....	..	...	680	18½ x 36½ x 36	⅛	800	(2) 7½	1,100	...	..
76-H	625.00	....	....	....	....	90,000	...	...	....	....	....	30	....	..	...	780	18½ x 36½ x 43	¼	870	(2) 7½	1,500	...	..
92-H	806.00	....	....	....	....	128,000	...	...	....	....	....	40	....	..	...	925	22 x 39 x 47	½	720	(2) 9	2,500	...	..
93-H	952.00	....	....	....	....	192,640	...	...	....	....	....	50	....	..	...	1,581	22 x 39 x 69	½	720	(3) 9	3,700	...	..
94-H	1,110.00	....	....	....	....	239,640	...	...	....	....	....	55	....	..	...	1,728	35 x 39 x 85	1	720	(4) 9	5,000	...	..
122-H	1,224.00	....	....	....	....	239,640	...	...	....	....	....	55	....	..	...	1,798	30 x 44 x 61	1	750	(2) 12	6,200	...	..

Duct Type

62-V	$525.00	...	...	....	....	46,600	...	...	....	....	....	14	...	...	...	780	62x 33 x 14	...	...	..	800	...	...
75-V	625.00	...	...	....	....	62,400	...	...	....	....	....	20	...	...	...	925	66 x 36 x 17	...	...	..	1,100	...	...
76-V	755.00	...	...	....	....	90,000	...	...	....	....	....	30	...	...	...	1,050	66 x 43 x 17	...	...	..	1,500	...	...
92-V	918.00	...	...	....	....	128,000	...	...	....	....	....	40	...	...	...	1,497	77 x 47 x 23	...	...	..	2,500	...	...
93-V	1,122.00	...	...	....	....	192,600	...	...	....	....	....	50	...	...	...	1,780	81 x 69 x 23	...	...	..	3,700	...	...
94-V	1,304.00	...	...	....	....	239,640	...	...	....	....	....	55	...	...	...	1,860	82 x 85 x 23	...	...	..	5,000	...	...
122-V	1,324.00	...	...	....	....	239,640	...	...	....	....	....	55	...	...	...	1,960	86 x 67 x 26	...	...	..	6,200	...	...

*80° water used. †Total input for both condensing unit and blower. ‡See input watts under compressor. ¶Water may also be used.

Nelson

Herman Nelson Corp., Moline, Ill.

Functions—Cooling and dehumidifying.

Cabinet—Nelson insulated steel cabinet, lacquer finish.

Compressor—Nelson rotary compressor, water cooled. Capacitor motor. High side safety cutout.

Blower—Nelson centrifugal blower with direct-connected capacitor motor.

Air Circulation—Air intake in back; air discharge in top. Nelson grille. No fresh air intake.

Cooling system—Direct expansion only. Nelson copper coils.

Controls—Thermostatic expansion valve, thermostat, and water-regulating valve.

Self-Contained

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	COMPRESSOR Bore & Stroke	Speed R.p.m.	Motor Hp.	Input Watts	Heat Capac. B.t.u.	Humidification Lbs./hr.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
G-750	$.....	70.4	0	2,250	5,750	8,000	Freon	8	Rotary	1,750	¾	780	0	0	300	385	31⅝ x 29⅜ x 15⅝	1/40	750	6	350	1,050	37

Consumer Acceptance of Winter Air Conditioning Built Up by Cleveland League Promotion

By T. T. Quinn

CLEVELAND—A greatly increased consumer acceptance of the worth of winter air conditioning has resulted from a vigorous promotional campaign on winter conditioning, inaugurated last fall by the Electrical League of Cleveland in cooperation with manufacturers, contractors, architects, and speculative builders.

Winter air conditioning was selected for the promotion because heating is a nine-months' necessity in Cleveland, whereas the actual need for summer cooling does not go much over 100 hours a year.

Additions to Staff for Project

To assist it in the promotional work, the League added to its staff three men: a salesman, an architect, and an electrical engineer, each of whom was charged with the task of building up air-conditioning consciousness among certain sections of the city's building trades and manufacturing groups. The salesman worked with speculative builders, the architect with architects, and the electrical engineer with manufacturers and contractors.

In each case, results sought were the same: the inclusion of winter air conditioning in the building plans. Five manufacturers of winter conditioning systems cooperated with the League in this work.

Cooperation with Builders

To those builders and contractors who would specify League-approved winter air-conditioning systems in the homes which they build, the League offered a broad program of promotional and advertising cooperation. Only qualifications were that the equipment installed must have League approval, and that it must perform the true functions of winter air conditioning—humidification, air circulation, temperature control, and filtration.

When ground for such a home was broken, the League offered to erect a 24-inch metal sign, announcing it as the site of a new air-conditioned home. As building progressed, the League spotlighted the house, calling it to the attention of passers-by. After construction was completed, the League also financed the lighting of the home's interior, in addition to erecting a small electrical sign both inside and outside the house.

League Advertising

Advertising cooperation by the League consisted of a program of not less than 25 lines in four consecutive issues of the Sunday *Cleveland Plain Dealer,* calling attention to the new home as an attractive buy for prospective homeowners. Only "string" to the League's financing offer was that the advertisement must begin with the words, "Air Conditioned for Health and Comfort."

Fifty-one homes were opened and displayed under the plan, and more than 90% of these were sold by the end of the demonstration period. The first home under the plan was opened in September and sold in October, despite the fact that it would not be ready for occupancy until June.

Building of 'Electrified Home'

A second home-building activity which the League pushed aggressively last year was the "electrified home." To qualify for League cooperation under this plan, the home had to be wired and lighted to League specifications, in addition to being winter air conditioned. This activity was the League's first step toward the all-electric kitchen, an activity which it plans to promote heavily this year.

Stipulations, in addition to winter conditioning, were that the home was to be wired for an electric range circuit. The League offered to advance $15, to take care of the first 30 feet of wiring necessary for the range circuit; lengths over 30 feet were paid for at the rate or 50 cents a lineal foot. The wiring had to be done by a League-approved contractor.

Promotion of Completed Homes

Upon completion, the homes were opened for a 30-day demonstration period, with the League arranging and financing the lighting and display as in the case of the other homes. Advertising by the League included one display ad in addition to the four classified ads, similar to those already mentioned.

During the exposition period the home was completely outfitted and lighted, the kitchen including range, refrigerator, and dishwasher. Home laundry equipment was shown in the basement. Only League-approved merchandise could be shown during the period.

Six homes were built under the plan last year and all of them were sold. This year he expects 25 homes or more to be erected. One Cleveland builder already asked for a blanket contract, covering 10 homes he plans to put up this summer and fall.

Public Speaking Classes

Carrying its winter air conditioning and all-electric kitchen stories directly into the homes, the League inaugurated last year a series of classes in public speaking under the direction of Sarah Harding Hunter, formerly with Boston Edison Co.

These classes were for housewives only, and included instructions on how to organize and deliver an address, parliamentary law, and the general conduct of a business meeting. Interest in this activity was especially high among the city's club women, many of whom had never before had the opportunity to obtain such information.

Seven Weekly Meetings

Training consisted of a series of seven weekly meetings, with as many as three groups coming in daily for instruction. The meetings were held in the League's auditorium, where the women would have a chance to see the model all-electric kitchen in operation, and were otherwise exposed to the subtle influences of indirect salesmanship.

Eighty-nine women attended the first class; 135 the second, and 150 the third. Seven groups, in all, attended the three series of classes.

At the end of the training period, and as a sort of "final examination," the women gave model lectures to their groups, in competition for a "best speaker" prize to be awarded by the League. Each of the groups had a different subject, the first group's being "Eye Sight Conservation," tying-in with the "Better Light-Better Sight" program; the second's, "Within an Air Conditioned Home," tying-in with this activity; and the third's, "Food—Its Preservation and Preparation," being in line with the League's all-kitchen theme.

250 Hear Final Speeches

Winners of the seven group eliminations competed in the finals for the "best speaker" award. More than 250 women attended the finals of the "Winter Air Conditioning" section.

Motive back of the classes, of course, was that the women, in addition to competing for the grand award, would deliver one of the three addresses before members of their own social groups, carrying the stories of lighting, winter conditioning, and the all-electric kitchen into Cleveland homes in a more effective manner than direct mail or newspaper advertising could hope to do.

Commercial Dealers Account for Most of Conditioner Sales

NEWARK—Most of the 24 Mobilaire units sold by Electric Equipment Co. during the few months the company has been handling the self-conditioned Westinghouse units have been sold through commercial refrigeration dealers, according to the reports of R. E. Buxton, general sales manager.

Through the commercial dealers, Mr. Buxton aims to get the maximum coverage at the lowest possible cost.

Electric Equipment Co. handles only room coolers, but works in cooperation with Abbott-Lester Co., distributor for larger Westinghouse air-conditioning equipment.

To facilitate cooperation, Abbott-Lester has moved into the same office building as the other concern.

A COMPLETE LINE OF

FED-R-FIN, FLAT FIN, FLUTED FIN AND FINLESS COILS
•
FED-R-VEX DRAIN BAFFLES
•
UNIT COOLERS
•
EVAPORATORS FOR ICE CUBE MAKING AND CABINET COOLING
•
HEAT INTERCHANGER FITTINGS
•
CONDENSERS
•
MODEL 33 THERMOSTATIC EXPANSION VALVES
•
AUTOMATIC EXPANSION VALVES
•
TWO-TEMPERATURE SNAP ACTION VALVES
•
CONSTANT PRESSURE VALVES
•
CHECK VALVES
•
UNIT HEATERS
•
AUTOMOTIVE RADIATORS
•
STEEL BEER KEGS

Here is Why Air Conditioning Men are using FEDDERS COILS AND VALVES

1. Factory engineered manifolding provides correct distribution of refrigerant throughout each section of the coil, and eliminates hazards of field assembly.

2. Multiple use of Fedders Model 33 High Capacity Thermostatic Expansion Valves doubly assures proper distribution of refrigerant. Their easy, sensitive adjustment aids accurate refrigerant control.

3. All coils and manifolds tested with high pressure. Approved by Underwriters Laboratories.

4. Copper Fins and Copper Tubes properly proportioned assure maximum heat transfer efficiency.

Pat. No. 2,023,749

5. Cleaned and absolutely dehydrated to provide a clean, dry interior.

6. Cataloged in complete lines of standard models to simplify engineering and installation. Built for use with refrigerant, cold water, hot water or steam.

Are You Getting Your Copy of the FEDDERS NEWS?

FEDDERS Manufacturing Co., Buffalo, N. Y.

ATLANTA BOSTON CHICAGO CINCINNATI DALLAS LOS ANGELES NEW YORK PHILADELPHIA

Kelvinator

Kelvinator Corp., Detroit, Mich.

Functions — Self-contained type: models SC34-DM and SC50-DM—cooling, dehumidifying, and cleaning; SCA-50, SCA-85—heating, cooling, dehumidifying, cleaning; all other self-contained—heating, cooling humidifying, dehumidifying, cleaning. Remote-floor type: model FT55-DU—cooling, dehumidifying, cleaning; all other remote-floor type—heating, cooling, humidifying, dehumidifying, cleaning. Suspended type: all models—cooling, dehumidifying, cleaning. Suspended or duct type and duct type: all models—heating, cooling, humidifying, dehumidifying, cleaning.

Cabinet—Self-contained and remote-floor type: Kelvinator steel cabinet with walnut finish. Suspended type: Kelvinator steel frame with Masonite panels. Flat gray finish. Duct type: Kelvinator steel cabinet with flat gray finish. All insulated.

Compressor—Self-contained: Kelvinator two-cylinder water-cooled compressor except models SCA-50 and SCA-85, air cooled. Overload and fused disconnect switch and high side safety cut-out on all models. Model SC160-DU also has across-the-line starter. Manual disconnect compressor control on SC34-DM, SC50-DM, and SCA-50. All others have pressure compressor control.

Blower—Self-contained, remote floor type, and small suspended units: centrifugal blower with direct-connected capacitor motor. Large suspended units: centrifugal blower V-belt-driven by repulsion-induction motor. Duct type: centrifugal blower V-belt-driven by squirrel-cage motor.

Air Circulation—Self-contained and remote floor types: models SC34-DM, SC50-DM, and SCA-50—air intake in one end. All others—both ends. All discharge through top. Fresh air intake on model SCA-85. Suspended type: air intake in top, discharge in front. Fresh air intake optional. Duct type: air intake in top or side, discharge in top. Fresh air intake optional.

Cooling System — Self-contained type: direct expansion only. All other types: direct expansion or circulating cold water except model FT55-DU (direct expansion only). Copper cooling coils.

Heating System—Copper coils. Heating capacity—models FT80-DU and FT50-DC, 6,000; FT110-DU and FT75-DC, 12,000; FT160-DU and FT100-DC, 16,000; CA-6354, 120,000; CA-8354, 146,000; CA-6551, 185,000; CA-8551, 216,000.

Type of Humidifier—Spray.

Air Cleaning Medium—Owens-Illinois filter.

Controls—Self-contained type: all models—float valve; models SC80-DU through SC100-DC—thermostat and air by-pass damper; models SC80-DU through SC50-DM—water-regulating valve; models SC80-DU through SC100-DC and SCA-85—liquid line solenoid valve; models SC50-DC, SC75-DC, and SC100-DC—humidistat and by-pass damper motor. Remote floor type: all models—thermostatic expansion valve, air by-pass damper, and refrigerant superheater; models FT50-DC, FT75-DC, and FT100-DC—by-pass damper motor. Suspended type: all models—thermostatic expansion valve and refrigerant superheater. Suspended or duct type and duct type: all models—thermostatic expansion valve, air by-pass damper, and refrigerant superheater.

Self-Contained Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrigeration Capacity Dehumidification	Refrigeration Capacity Sensible Heat	Refrigeration Capacity Total B.t.u.	Refrigerant Kind	Refrigerant Charge Lbs.	COMPRESSOR Bore & Stroke	COMPRESSOR Speed R.p.m.	COMPRESSOR Motor Hp.	COMPRESSOR Input Watts	Heat Capac. B.t.u.	Humidification* Lbs./hr.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	BLOWER Speed R.p.m.	BLOWER Diam. In.	BLOWER Total C.f.m.	BLOWER Veloc. F.p.m.	BLOWER Input Watts
SC-80-DU	.....	93.4	25.5	2,900	6,800	9,700	Freon	6¼	1 11/16 x 2	575	¾	960	9,300	2.9	630	750	53⅛ x 34¼ x 19¼	1/40	1,140	(2) 5	275	600	60
SC-110-DU	.....	132.0	41.0	4,200	10,000	14,200	Freon	11¾	2¼ x 2½	375	1	1,330	19,400	4.0	750	975	55⅜ x 42¾ x 19¼	1/20	1,140	(2) 5⅜	390	600	90
SC-160-DU	.....	166.0	41.0	5,400	12,800	18,200	Freon	14¼	2¼ x 2½	490	1½	1,600	24,000	5.5	875	1,020	58⅛ x 42⅜ x 19¼	1/10	1,140	(2) 6	535	730	120
SC-50-DC	.....	93.4	25.5	1,400	5,700	7,100	Freon	6¼	1½ x 1¾	575	½	660	9,300	2.9	630	725	53⅛ x 34¼ x 19¼	1/40	1,140	(2) 5	275	600	60
SC-75-DC	.....	132.0	41.0	1,700	8,300	10,000	Freon	9⅞	1 13/16 x 2½	375	¾	945	19,400	4.0	700	970	55⅜ x 42¾ x 19¼	1/20	1,140	(2) 5⅜	390	600	90
SC-100-DC	.....	166.0	41.0	3,700	11,400	15,100	Freon	14¼	2¼ x 2½	375	1	1,160	24,000	5.5	850	985	58⅛ x 42¾ x 19¼	1/10	1,140	(2) 6	535	730	120
SC-34-DM	.....	21.2	0.	1,350	2,650	4,000	Freon	2¼	1¼ x 1½	640	⅓	410	0	0.	325	450	27⅝ x 34¼ x 16	1/40	810	5⅜	150	410	57
SC-50-DM	.....	31.4	0.	2,150	4,250	6,400	Freon	2½	1½ x 1¾	575	½	640	0	0.	360	490	31⅞ x 34¼ x 16	1/40	805	6	225	615	62
SCA-50	.....	39.2	17.7	1,100	4,750	5,850	Freon	3 13/16	1½ x 1¾	575	½	700	12,000	0.	575	630	42⅛ x 48⅛ x 19	1/10	960	6	195	550	113
SCA-85	.....	86.8	40.2	2,600	7,200	9,800	Freon	5 7/16	1 13/16 x 2½	450	1	1,500	24,000	0.	740	960	45⅛ x 51½ x 22	1/20	960	(2) 5⅜	390	630	52

Remote Floor Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	DIRECT EXPANSION Refrigeration Capacity Dehumidification	DIRECT EXPANSION Refrigeration Capacity Sensible Heat	DIRECT EXPANSION Refrigeration Capacity Total B.t.u.	Refrigerant Kind	Refrigerant Charge Lbs.	WATER Refrigeration Capacity Dehumidification	WATER Refrigeration Capacity Sensible Heat	WATER Refrigeration Capacity Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification* Lbs./hr.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	BLOWER Speed R.p.m.	BLOWER Diam. In.	BLOWER Total C.f.m.	BLOWER Veloc. F.p.m.	BLOWER Input Watts
FT-55-DU	$.....	62.3	0	2,600	5,000	7,600	...	...	....	....	....	...	...	0	185	285	27⅝ x 34¼ x 14½	1/40	960	(2) 5	240	520	39
FT-80-DU	.....	93.4	25.5	3,900	6,900	10,800	...	...	510	5,490	6,000	1.20	0.10	2.9	230	335	31⅞ x 34¼ x 14½	1/40	1,140	(2) 5	275	600	60
FT-110-DU	.....	132.0	41	5,300	9,700	15,000	...	...	2,940	9,060	12,000	2.40	0.30	4.0	290	405	31⅞ x 42¾ x 14½	1/20	1,140	(2) 5⅜	390	600	90
FT-160-DU	.....	166.0	41	6,900	13,000	19,900	...	...	3,920	12,080	16,000	3.20	0.40	5.5	330	450	34⅝ x 42¾ x 17	1/10	1,140	(2) 6	535	730	120
FT-50-DC	.....	93.4	25.5	3,900	6,900	10,800	...	...	510	5,490	6,000	1.20	0.10	2.9	235	340	3⅞ x 34¼ x 14½	1/40	1,140	(2) 5	275	600	60
FT-75-DC	.....	132.0	41.	5,300	9,700	15,000	...	...	2,940	9,060	12,000	2.40	0.30	4.0	295	410	31⅞ x 42¾ x 14½	1/20	1,140	(2) 5⅜	390	600	90
FT-100-DC	.....	166.0	41	6,900	13,000	19,900	...	...	3,920	12,080	16,000	3.20	0.40	5.5	335	455	34⅝ x 42¾ x 17	1/10	1,140	(2) 6	535	730	120

Suspended Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	DIRECT EXPANSION Refrigeration Capacity Dehumidification	DIRECT EXPANSION Refrigeration Capacity Sensible Heat	DIRECT EXPANSION Refrigeration Capacity Total B.t.u.	Refrigerant Kind	Refrigerant Charge Lbs.	WATER Refrigeration Capacity Dehumidification	WATER Refrigeration Capacity Sensible Heat	WATER Refrigeration Capacity Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification* Lbs./hr.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	BLOWER Speed R.p.m.	BLOWER Diam. In.	BLOWER Total C.f.m.	BLOWER Veloc. F.p.m.	BLOWER Input Watts
C-70-DU	$.....	70.4	0	3,200	6,600	9,800	...	...	600	5,400	6,000	1.2	0.1	0	175	250	15⅝ x 30⅝ x 17⅜	1/40	1,140	5	265	630	62
C-125-DU	.....	125.0	0	5,600	10,300	15,900	...	...	1,825	9,175	11,000	2.2	0.3	0	215	325	19⅝ x 31⅛ x 22	1/20	1,140	5⅜	378	860	70
C-200-DU	.....	220.0	0	9,900	18,100	28,000	...	...	7,560	16,440	24,000	4.8	2.2	0	375	450	19⅝ x 46¼ x 22	1/10	1,120	6	663	753	120
C-375-DU	.....	441.0	0	18,900	34,600	53,500	...	...	15,120	32,880	48,000	9.6	1.9	0	450	685	22⅝ x 46¼ x 33	¼	940	8⅛	1,260	860	285

Suspended or Duct Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	DIRECT EXPANSION Refrigeration Capacity Dehumidification	DIRECT EXPANSION Refrigeration Capacity Sensible Heat	DIRECT EXPANSION Refrigeration Capacity Total B.t.u.	Refrigerant Kind	Refrigerant Charge Lbs.	WATER Refrigeration Capacity Dehumidification	WATER Refrigeration Capacity Sensible Heat	WATER Refrigeration Capacity Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification* Lbs./hr.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	BLOWER Speed R.p.m.	BLOWER Diam. In.	BLOWER Total C.f.m.	BLOWER Veloc. F.p.m.	BLOWER Input Watts
CA-6354	$.....	372	260	17,000	34,600	51,600	...	...	13,930	34,070	48,000	9.6	1.0	15.0	590	925	28 x 46¼ x 53¾	½	635	9¾	1,400	935	215
CA-8354	.....	495	260	24,800	46,200	71,000	...	...	20,300	44,200	64,500	12.9	2.7	18.5	620	975	28 x 46¼ x 53¾	½	825	9¾	1,770	1,180	350
CA-6551	.....	580	350	33,000	61,000	94,000	...	...	21,400	53,600	75,000	15.0	1.3	23.0	820	1,200	32 x 50¼ x 65⅜	½	520	11⅜	2,200	975	280
CA-8551	.....	770	350	38,600	71,400	110,000	...	...	31,500	68,500	100,000	20.0	2.7	29.0	835	1,250	32 x 50¼ x 65⅜	½	660	11⅜	2,760	1,225	470

Duct Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	DIRECT EXPANSION Refrigeration Capacity Dehumidification	DIRECT EXPANSION Refrigeration Capacity Sensible Heat	DIRECT EXPANSION Refrigeration Capacity Total B.t.u.	Refrigerant Kind	Refrigerant Charge Lbs.	WATER Refrigeration Capacity Dehumidification	WATER Refrigeration Capacity Sensible Heat	WATER Refrigeration Capacity Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification* Lbs./hr.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	BLOWER Speed R.p.m.	BLOWER Diam. In.	BLOWER Total C.f.m.	BLOWER Veloc. F.p.m.	BLOWER Input Watts
CS-610	$.....	765	Variable	40,000	85,000	125,000	...	...	40,300	87,700	128,000	25.6	4.35	Var.	1,100	1,550	42¼ x 60 x 81	†	†	(2) 13	4,000	...	†
CS-810	.....	800	Variable	40,000	75,000	115,000	...	...	36,100	74,900	111,000	22.0	7.20	Var.	1,100	1,550	42¼ x 60 x 81	†	†	(2) 13	4,000	...	†
CS-615	.....	1,175	Variable	61,500	129,500	191,000	...	...	42,800	107,200	150,000	30.0	1.30	Var.	1,800	2,400	68 x 53 x 128	†	†	19½‡	6,000	...	†
CS-815	.....	1,250	Variable	62,000	116,000	178,000	...	...	44,300	105,700	150,000	30.0	2.10	Var.	1,770	2,270	68 x 53 x 116	†	†	19½‡	6,000	...	†
CS-620	.....	1,735	Variable	91,000	191,000	282,000	...	...	64,100	160,900	225,000	45.0	1.30	Var.	2,600	3,400	68 x 82 x 128	†	†	(2) 22¾	12,000	...	†
CS-820	.....	1,570	Variable	78,500	145,500	224,000	...	...	63,000	137,000	200,000	40.0	2.70	Var.	1,950	2,550	68 x 53 x 128	†	†	19½‡	6,000	...	†
CS-630	.....	2,290	Variable	120,000	252,000	372,000	...	...	121,000	263,000	384,000	76.8	4.35	Var.	3,000	4,000	76 x 82 x 142	†	†	(2) 19½‡	12,000	...	†
CS-830	.....	2,310	Variable	115,000	215,000	330,000	...	...	94,500	205,500	300,000	60.0	2.70	Var.	2,800	3,600	68 x 82 x 128	†	†	(2) 22¾	12,000	...	†
CS-840	.....	3,220	Variable	161,000	299,000	460,000	...	...	144,000	300,000	444,000	88.4	7.20	Var.	3,400	4,400	76 x 82 x 142	†	†	(2) 22¾	12,000	...	†

*60° water used. †Determined by duct resistance ‡Blower either 19½ or 22¾.

McCord

McCord Radiator & Mfg. Co.
Detroit, Mich.

Functions—Models AC-300, AC-500, AC-700—cooling, dehumidifying, cleaning; all other models: heating, cooling, humidifying, dehumidifying, and cleaning.

Cabinet—McCord steel cabinet, insulated, with crinkle or walnut olive finish on AC-300, AC-500, AC-700 only, spray lacquer finish on all others.

Blower—Capacitor motor with V-belt drive on suspended or duct type.

Air Circulation—Air intake at back; air discharge at front. McCord double louvre on AC-300, AC-500, AC-700, and grille on all others. Fresh air intake provided.

Cooling System—Direct expansion and circulating cold water. McCord copper cooling coils.

Heating System—McCord copper heating coils. Heat capacity in B.t.u.'s per hour: model 101, 38,500; 102, 62,000; 122, 182,100; 132, 242,800; 152, 364,200; 182, 485,600.

Type of Humidifier—Steam and water spray.

Air Cleaning Medium—Glass and fiber filter.

Controls—All models: thermostatic expansion valve, liquid line solenoid valve; models 101, 102, 122, 132, 152, 182: humidistat, thermostat, air by-pass dampers, and water-regulating valve.

Special Features—Variable speed drive and McCord Ecconomizers on suspended or duct type. Double louvres optional on suspended type.

Suspended Type

Model No.	Price†	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT‡ Dehumidification	Refrig. Capacity—DIRECT‡ Sensible Heat	Refrig. Capacity—DIRECT‡ Total B.t.u.	Refrigerant Kind	Refrigerant Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Refrig. Capacity—WATER Sensible Heat	Refrig. Capacity—WATER Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification* Lbs./hr.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	BLOWER Speed R.p.m.	BLOWER Diam. In.	BLOWER Total C.f.m.	BLOWER Veloc. F.p.m.	BLOWER Input Watts
AC-300 ...	$117.00	58	0	....	....	8,950	Any	...	.....	...	...	...	...	0	80	...	14½ x 19⅞ x 15⅞	...	...	..	460-300	300-450	...
AC-500 ...	162.00	130	0	....	....	19,400	Any	...	.....	...	...	...	...	0	105	...	20½ x 24⅞ x 19⅝	...	...	..	800-675	...	...
AC-700 ...	180.00	163	0	....	....	31,000	Any	...	.....	...	...	...	...	0	140	...	23½ x 27⅞ x 19½	...	...	..	1,200-800	...	...

Suspended or Duct Type

Model No.	Price†	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT‡ Dehumidification	Refrig. Capacity—DIRECT‡ Sensible Heat	Refrig. Capacity—DIRECT‡ Total B.t.u.	Refrigerant Kind	Refrigerant Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Refrig. Capacity—WATER Sensible Heat	Refrig. Capacity—WATER Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification* Lbs./hr.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	BLOWER Speed R.p.m.	BLOWER Diam. In.	BLOWER Total C.f.m.	BLOWER Veloc. F.p.m.	BLOWER Input Watts
101	$261.00	130	65	....	19,000	29,000	Freon or		....	....	38,500	8	...	10	600	...	21⅞ x 27 x 68	¼	800	9¾	800	1,150	125
102	396.00	260	130	....	38,000	58,000	CH_3Cl or		....	....	62,000	16	...	20	1,060	...	21⅞ x 47 x 68	⅓	800	(2) 9¾	1,600	1,150	180
122	566.00	390	195	....	57,000	87,000	Water or		....	....	120,000	24	...	30	1,370	...	21⅞ x 61 x 68	½	650	(2) 11⅜	2,400	1,250	270
132	783.00	520	260	....	76,000	116,000	NH_3		....	....	150,000	32	...	40	1,410	...	29½ x 61 x 73	¾	610	(2) 13	3,200	1,250	390
152	931.00	780	390	....	114,000	175,000			....	....	170,000	35	...	60	1,770	...	29½ x 81 x 73	1	480	(2) 16¼	4,800	1,200	550
182	1,240.00	1,040	520	....	152,000	233,000			....	....	225,000	45	...	80	2,060	...	41½ x 81 x 89	1½	450	(2) 17⅞	6,400	1,280	750

*Temperature of water used: Various. †Price based on 2-row steam coils and 3-row Freon coils. ‡Ratings based on 2-row steam coils, 4-row Freon coils.

McQuay

McQuay, Inc., Minneapolis, Minn.

Functions—Models 106, 126, 156, 186, and 216: cooling and dehumidifying; all W models: heating, cooling, and dehumidifying.

Cabinets—McQuay insulated steel cabinet, crackle-enamel finish.

Air Circulation—Air intake in rear, discharge in front, no fresh air intake.

Cooling System—W models: circulating cold water; all others: direct expansion. McQuay tinned-copper cooling coils.

Heating System—McQuay tinned-copper coils, may be used with hot water. Heat capacities: model 106-W, 13,900 B.t.u.; 126-W, 22,000; 156-W, 34,000; 186-W, 64,000; 216-W, 81,500; 246-W, 115,000; and 276-W, 135,000.

Suspended Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Refrig. Capacity—DIRECT Sensible Heat	Refrig. Capacity—DIRECT Total B.t.u.	Refrigerant Kind	Refrigerant Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Refrig. Capacity—WATER Sensible Heat	Refrig. Capacity—WATER Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification Lbs./hr.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	BLOWER Speed R.p.m.	BLOWER Diam. In.	BLOWER Total C.f.m.	BLOWER Veloc. F.p.m.	BLOWER Input Watts
106	$126.00	49.58	0	....	....	11,400	...	....	....	....	....	...	....	0	59	77	15½ x 19½ x 15½	1/30	1,140	10	325	425	..
126	156.00	64.8	0	....	....	17,500	...	....	....	....	....	...	....	0	85	105	17 x 21 x 15½	1/20	1,140	12	515	515	..
156	187.00	101.0	0	....	....	28,700	...	....	....	....	....	...	....	0	113	136	20 x 24 x 17	1/10	1,140	15	850	545	..
186	219.00	145.8	0	....	....	52,650	...	....	....	....	....	...	....	0	146	172	23 x 27 x 18½	⅛	1,140	18	1,800	800	..
216	258.00	198.29	0	....	....	68,800	...	....	....	....	....	...	....	0	179	215	27 x 30 x 20	¼	1,140	21	2,350	768	..
106-W ...	126.00	49.58	49.58	....	....	....	...	....	....	....	13,900	11	....	0	59	77	15½ x 19½ x 15½	1/30	1,140	10	325	425	..
126-W ...	156.00	64.8	64.8	....	....	....	...	....	....	....	22,000	12	....	0	85	105	17 x 21 x 15½	1/20	1,140	12	515	515	..
156-W ...	187.00	101.0	101.0	....	....	....	...	....	....	....	34,000	15	....	0	113	136	20 x 24 x 17	1/10	1,140	15	850	545	..
186-W ...	219.00	145.8	145.8	....	....	....	...	....	....	....	64,000	18	....	0	146	172	23 x 27 x 18½	⅛	1,140	18	1,800	800	..
216-W ...	258.00	198.29	198.29	....	....	....	...	....	....	....	81,500	21.5	....	0	179	215	27 x 30 x 20	¼	1,140	21	2,350	768	..
246-W ...	335.00	259.2	259.2	....	....	....	...	....	....	....	115,000	24.5	....	0	263	333	30 x 33 x 20	½	1,140	24	3,600	900	..
276-W ...	436.00	327.89	327.89	....	....	....	...	....	....	....	135,000	27.5	....	0	387	477	33 x 36 x 20	¾	1,140	27	4,100	810	..

New Duct Insulation Made by Armstrong

LANCASTER, Pa.—A new type of corkboard insulation for ducts has been developed by the Armstrong Cork Products Co. to meet the requirements of small commercial air conditioning installations, reports T. R. Nunan, manager of the low temperature insulation department. The new product will be known as Armstrong's DI (duct insulation) corkboard.

Main problem in such installations, according to Mr. Nunan, is to prevent condensation rather than to conserve refrigeration; hence the new type of corkboard, offered in ½-in. thickness, is claimed sufficient to solve this problem. Where insulation is required to conserve refrigeration, standard corkboard in heavier thickness should be used, he pointed out.

Armstrong's new DI corkboard is not affected by moisture, and a thin mastic coating on one side is said to strengthen the material, increase its flexibility, seal it against moisture penetration, and provide a finish.

DI corkboard can be erected in waterproof cement or asphalt and, because of its light weight, reinforcement with wires or bands is often not necessary. It can be made to conform readily to sharp curvatures and can be cut and fitted with a sharp knife. The thermal conductivity value of DI corkboard is high due to its special light density. It is available only in ½-in. thickness in 12-in. x 36-in. sheets.

Business Men Guests at Air-Conditioning Lunches Of Youngstown Utility

YOUNGSTOWN, Ohio — Special luncheons attended by business men in groups of 30 and 40 were part of an educational drive recently conducted by Ohio Edison Co. in cooperation with seven air-conditioning dealers.

Simple charts, product displays, short talks, and a brief skit were used to bring the "comfort and profit" story to business executives.

Live prospects were uncovered by the local dealers, who answered questions and supplied supplementary data at each of these sessions.

Interest was aroused to the extent that the exhibit had to be opened to the public for a few days, utility officials say.

Workers Stay Overtime in Air-Conditioned Plant

CLEVELAND—One of the opening steps in furthering a policy of employes' cooperation started by the Sherwin-Williams Paint Co. included the installation of air-conditioning equipment in the Linseed Oil Mill here. During the recent hot spell officials of the company declared workers remained in the plant after working hours to enjoy the cooled air.

Other plants will be air conditioned in the future, it was announced.

Free Inspections to Be Made by Warm Air Heating Group

(Concluded from Page 1, Column 2)

clearing up in the minds of the present and potential users of warm air heating and air conditioning, winter and summer, the confusing statements being made in national advertising and sales literature by the many new interests in the field, Mr. Friedman says.

A true definition of air conditioning, its proper functions, and its correct installation will be included in the educational explanations.

To aid in the promotion, the Texas Centennial has designated Aug. 17 as Air Conditioning Day and the Dallas papers will carry a special four-page edition on heating and air conditioning. The Great Lakes Exposition in Cleveland is also expected to set aside a similar day. Civic bodies such as the Rotary Clubs are said to be asking for speakers on the subject.

The movement is to culminate with the flying of banners, parades, and heating and air-conditioning displays and expositions in all localities, according to Mr. Friedman.

Window suggestions, stickers, and banners are being mailed to dealers from headquarters of the committee in charge.

Dr. Mills Cites Need For Air Conditioning In United States

CINCINNATI—From his studies on the relation of weather to human behaviour, Dr. C. A. Mills, professor of experimental medicine at the University of Cincinnati, declared recently that the world is getting warmer and the United States may become a country of quick-tempered, semi-tropical, emotional people with low energy, if the trend of gradually rising temperature, which he has traced through from 1850, continues.

Before 1850, the doctor stated, the temperature tended downward over a period of two or three centuries. During the last few decades there has been a northward shift of the "storm belt," a zone of quick violent changes in temperatures and other climatic conditions, Dr. Mills affirmed in his survey.

"The increase in world population during the period of generally decreasing temperature was terrific," he said. "We may conceivably record a gradual decrease in world population as we move into a cycle of higher temperatures. As temperatures increase, fertility of animals decreases. Descendants of this generation may face vastly different living conditions," he added.

Dr. Mills is the author of the book "Living With The Weather," which was reviewed in the April 24, 1935, issue of ELECTRIC REFRIGERATION NEWS.

First Air-Conditioned Apartment Building Completed In London

(Concluded from Page 1, Column 4)

First flip turns on the compressor. Second flip cuts out the compressor and lets in the hot water.

Of course there's a thermostat, but the owners of these new "flats" don't bother prospective renters about that. England is a nation which is accustomed to being warm on one side of the body at a time, having been brought up on draughts and open fires rather than central heating. A thermostat, the promoters reason, might seem too complicated at first sight.

So, they say: "Switch it here for warm, or there for cold. Simple, isn't it?"

Thus the English have leaped ahead of American air-conditioning salesmanship on two points: (1) They have made a complete apartment house installation; and (2) they have taken the mystery out of air conditioning.

Instead of saying "Trust us, and sign here," the salesmen trained by Mr. Farish simply put it:

"Just turn the switch."

McIlhenny Will Manage Gesco District Sales

CHICAGO—J. P. McIlhenny, formerly manager of sales for the Elliott-Lewis Electrical Co., Philadelphia, has been appointed district manager of appliance sales of the General Electric Supply Corp. here, J. L. Busey, president, announced recently.

Delco-Frigidaire Units Used in Conditioning Louisville Hotel

(Concluded from Page 1, Column 2)

any duct work, yet the rooms themselves are free of any space-consuming units.

"In our case the contractors were able to utilize that space which is almost invariably lost in every hotel room, the inside top of the clothes closets. Here they placed small, compact units which circulate conditioned air to and from the sleeping rooms through metal grilles.

"On the wall near the bed is the thermostat with which the guest can regulate the room temperature to suit his own desires.

"Compressors, which furnish the refrigeration power are located in unused storage space, far removed from all rooms, leaving a small, quiet blower within each unit as the only moving part in the guest room area."

Upon completion of the main portion of installation a few days ago, several guests who had the unexpected privilege of being literal "first nighters" in relation to the air conditioning, were enthusiastic in their comments.

Delco-Frigidaire equipment was used throughout and was supplied by Smith Distributing Co., Louisville. Engineering specifications and installation of all equipment were handled by Chagnard Plumbing & Heating Co., Delco-Frigidaire dealer .

McCray Sales in Toledo District Are Highest During May

TOLEDO—Sales of McCray commercial refrigerators and equipment in the Toledo territory during May were the highest in history, reaching 284% of quota for the month, reports F. I. Davison, branch manager of McCray Refrigerator Corp.'s office here.

Equipment sold during the month included several market installations, five large beer cooling jobs, 45 display cases, and refrigeration equipment to fit up storage rooms, walk-in coolers, and various cabinets which had been installed previously.

PERFECTION
Refrigeration Parts are Certified to Excel

Ask for catalog covering complete line of Valves, Fittings, and Parts for Compressors

PERFECTION REFRIGERATION PARTS CO.
HARVEY, ILLINOIS

20 QUALITY FEATURES

(No. 15)

Servel Connecting Rods Are Diamond Bored to Insure Exact Diameter, Exact Center Distance and True Cylinder Surfaces.

REPEAT BUSINESS

For many years, Servel Commercial Refrigeration distributors have enjoyed added profits and lowered sales expense through repeated purchases by satisfied users . . . This year, history is repeating itself in the Air Conditioning field. Owners who have already enjoyed the benefits of Servel Air Conditioning for the past several seasons are "coming back for more"—for their homes—for additional stores—for new offices . . . User satisfaction is one of the vital, valuable assets of every Servel franchise. If there is an opening for a distributorship in your territory, a letter or a wire will bring full details.

SERVEL
COMMERCIAL REFRIGERATION
SERVEL, INC. *Commercial Refrigeration Division* EVANSVILLE, IND.

This modern 33-acre plant is the home of Servel Commercial Refrigeration and the world-famous Electrolux, the Servel Gas Refrigerator

ANSUL CHEMICAL COMPANY
MARINETTE » » » » » WISCONSIN

Lipman

General Refrigeration Sales Co.
Beloit, Wis.

Functions—Suspended type: cooling and dehumidifying; cleaning optional on models CU-2001 and CU-4001. Suspended or duct type: cooling and dehumidifying; cleaning optional. Duct type: cooling and dehumidifying; cleaning optional.

Cabinet—Suspended type: Lipman insulated copper and brass cabinet, black-enamel finish, plated front. Models CU-2001 and CU-4001 have Lipman insulated steel cabinet with aluminum-enamel or optional finish. Suspended or duct type and duct type: Lipman insulated steel cabinet with aluminum-enamel finish.

Compressor—Duct type: Lipman 4-cylinder water-cooled compressor. Century motor. Cutler-Hammer motor starter. Minneapolis-Honeywell high side safety cutout. Minneapolis-Honeywell compressor control.

Blower—Suspended type: Switzer-Cummins propeller type, except CU-2001 and CU-4001, which are Buffalo Forge HVA type. Wagner split-phase motor, except M-16-C and F-16-C, which are Emerson split phase. Direct drive. Suspended or duct type and duct type: Buffalo Forge HVA blower. Wagner motor. Direct drive.

Air Circulation—Suspended type: air intake in rear, discharge in front; except CU-2001 and CU-4001, intake in side, discharge in side or top. No fresh air intake. Suspended or duct type: intake in side, discharge in side. No fresh air intake. Uni-flo grilles. Duct type: air intake in side, discharge in top or side. Fresh air intake provided in ducts.

Cooling System—Direct expansion. Circulating cold water available for special applications. Lipman copper coils.

Air Cleaning Medium—Filters.

Controls—Suspended type: thermostatic expansion valve. Thermostat and humidistat optional on CU models. Suspended or duct type: thermostatic expansion valve; humidistat and thermostat optional. Duct type: thermostatic expansion valve, water-regulating valve; humidistat and thermostat optional.

Special Features—Refrigerant heat interchanger; duct type self-contained.

Self-Contained Duct Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	COMPRESSOR Bore & Stroke	Speed R.p.m.	Motor Hp.	Input Watts	Heat Capac. B.t.u.	Humidification Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
5-2000	$.....	530	...	22,000	40,000	62,000	Freon	10	2⅜ x 3¼	470	5	4,700†	0	0	1,350	1,485	45⅝ x 52¼ x 30⅜	½	1,140	12	2,000	...	490
10-4000	.....	933	...	41,000	77,000	118,000	Freon	20	3¼ x 4	450	10	9,000†	0	0	2,500	2,665	56⅜ x 63¼ x 36½	1	865	15	4,000	...	880

†Condensing unit power input based on 75° water.

Suspended Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
M-10-C	$.....	40.1	0	1,950	5,150	7,100	CH_3Cl	...	....	....	....	...	...	0	56	70	13½ x 13½ x 18⅛	1/80	1,500	10	350	...	61
F-10-C	.....	40.1	0	1,950	5,150	7,100	Freon	...	....	....	....	...	...	0	56	70	13½ x 13½ x 18⅛	1/80	1,500	10	350	...	61
M-12-C	.....	71.3	0	3,200	8,500	11,700	CH_3Cl	...	....	....	....	...	...	0	80	100	17 x 17 x 19	1/40	1,000	12	500	...	69
F-12-C	.....	71.3	0	3,200	8,500	11,700	Freon	...	....	....	....	...	...	0	80	100	17 x 17 x 19	1/40	1,000	12	500	...	69
M-16-C	.....	114.2	0	3,100	14,800	17,900	CH_3Cl	...	....	....	....	...	...	0	117	140	20½ x 20½ x 21¾	1/20	1,150	16	1,000	...	113
F-16-C	.....	114.2	0	3,100	14,800	17,900	Freon	...	....	....	....	...	...	0	117	140	20½ x 20½ x 21¾	1/20	1,150	16	1,000	...	113
CU-2001	.....	530	0	22,000	41,000	62,000	Freon	...	....	....	....	...	...	0	485	560	20 x 48½ x 31⅝	½-½	860†	12	2,000	...	490
CU-4001	.....	933	0	41,000	77,000	118,000	Freon	...	....	....	....	...	...	0	...	...	.....	¼-1	860	15	4,000	1,000	880

Suspended or Duct Type

CU-2002	.....	530	0	22,000	41,000	62,000	Freon	...	....	....	....	...	...	0	485	560	20 x 48½ x 31⅝	½-½	860†	12	2,000	1,000	490
CU-4002	.....	933	0	41,000	77,000	118,000	Freon	...	....	....	....	...	...	0	...	...	.....	¾-1	860	15	4,000	1,000	880

†May be secured at 1,150 r.p.m.

Miller

Miller Conditionair, Inc.
Los Angeles, Calif.

Functions—Remote floor type: models C-K and D-K, cooling, humidifying, dehumidifying, and cleaning; all others, heating, cooling, humidifying, dehumidifying, and cleaning. Suspended type: heating, cooling, humidifying, dehumidifying, and cleaning.

Cabinet—Miller steel cabinet, walnut finish.

Blower—Direct drive.

Cooling System—Models C-W and D-W: circulating cold water; all others: direct expansion. Copper cooling coils.

Heating System—Copper coils, may be used with hot water.

Type of Humidifier—Spray.

Air Cleaning Medium—Cartridge filter.

Controls—Water-regulating valve and automatic expansion valve.

Special Features—Medicinal inhalant cup.

Remote Floor Type

†Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
C-S	$.....	...	...	....	....	....	Freon	...	....	....	....	...	...	...	190	221	39⅛ x 22¼ x 16¼	1/40	900	..	...	...	...
D-S	.....	...	...	....	....	....	Freon	...	....	....	....	...	...	...	190	221	34⅞ x 22¼ x 16¼	1/40	900	..	...	...	...
C-K	.....	...	0	....	....	....	Freon	...	....	....	....	...	...	...	190	221	39⅛ x 22¼ x 16¼	1/40	900	..	...	...	...
D-K	.....	...	0	....	....	....	Freon	...	....	....	....	...	...	...	190	221	34⅞ x 22¼ x 16¼	1/40	900	..	...	...	...
C-W	.....	...	...	....	....	....	Freon	...	....	....	....	...	...	...	190	221	39⅛ x 22¼ x 16¼	1/40	900	..	...	...	...
D-W	.....	...	...	....	....	....	Freon	...	....	....	....	...	...	...	190	221	34⅞ x 22¼ x 16¼	1/40	900	..	...	...	...

†Miller also manufactures a suspended-type unit, model BG-S, on which no tabular information was supplied.

Norge

Norge Division, Borg-Warner Corp.
Detroit, Mich.

Functions—Cooling, dehumidifying, and cleaning.

Cabinet—Insulated steel cabinet, walnut finish.

Compressor—Norge Rollator compressor, water cooled. High side safety cutout. Pressure control.

Air Circulation—Air intake in rear panel, discharge in top. Fresh air intake provided.

Cooling System—Direct expansion. Copper cooling coils. Coils cannot be used with hot water.

Air Cleaning Medium—Filter.

Controls—Thermostatic expansion valve. Thermostat available.

Self-Contained

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	COMPRESSOR Bore & Stroke	Speed R.p.m.	Motor Hp.	Input Watts	Heat Capac. B.t.u.	Humidification Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
R-100-F	$525.00	...	0	....	....	....	Freon	15	.....	650	1	...	0	0	626	696	35¾ x 38⅝ x 20⅞	1/20	...	(2) 6	425	625	...

Peerless

Peerless Ice Machine Co., Chicago, Ill.

Functions—All models: cooling and dehumidifying.

Cabinet—Insulated steel cabinet, any finish. Models 9-HM, 12-HM, 18-HM, and 24-HM Peerless "Band Box" model, polished aluminum, black trim.

Blowers—Squirrel cage type. Models 9-HM, 12-HM, 18-HM, and 24-HM propeller type.

Air Circulation—Models 9-HM, 12-HM, 18-HM, and 24-HM, air intake in back, units are semi-circular with dual outlets on front set at 40° angle. Air is drawn through coil.

Cooling System—Direct expansion. Peerless copper coils. Models 9-HM, 12-HM, 18-HM, and 24-HM aluminum fin on copper or aluminum tubing.

Controls—Thermostatic expansion valve.

Remote Floor Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
1-TAF	$227.25	90	0	4,000	8,000	12,000	Any	...	....	....	....	...	....	0	255	335	30 x 30 x 16	1/10	850	6¼	700	450	...
2-TAF	304.80	182.5	0	8,000	16,000	24,000	Any	...	....	....	....	...	....	0	330	420	34 x 32 x 18	1/8	850	7¾	1,200	...	...
3-TAF	394.80	267	0	12,000	24,000	36,000	Any	...	....	....	....	...	....	0	415	515	36 x 45 x 18	1/4	850	9	2,200	...	...
4-TAF	496.72	364	0	16,000	32,000	48,000	Any	...	....	....	....	...	....	0	590	700	43 x 45 x 18	1/2	500	10⅝	2,750	...	...
5-TAF	537.00	450	0	20,000	40,000	60,000	Any	...	....	....	....	...	....	0	620	730	43 x 46 x 21	1/2	690	10⅝	3,600	...	...
6-TAF	584.45	540	0	24,000	48,000	72,000	Any	...	....	....	....	...	....	0	650	770	45 x 47 x 24	1/2	690	10⅝	3,600	...	...
7½-TAF	750.60	680	0	30,000	60,000	90,000	Any	...	....	....	....	...	....	0	875	995	58 x 60 x 30	3/4	535	(2) 12	4,400	...	...
10-TAF	964.40	900	0	40,000	80,000	120,000	Any	...	....	....	....	...	....	0	1,105	1,225	64 x 64 x 30	3/4	404	(2) 15	5,960	...	...
12½-TAF	1,111.25	1,132	0	50,000	100,000	150,000	Any	...	....	....	....	...	....	0	1,260	1,380	65 x 78 x 30	1	448	(2) 15	7,500	...	...
15-TAF	1,247.50	1,352	0	60,000	120,000	180,000	Any	...	....	....	....	...	....	0	1,375	1,500	66 x 75 x 36	1½	495	(2) 15	8,920	...	...
17½-TAF	1,546.00	1,583	0	70,000	140,000	210,000	Any	...	....	....	....	...	....	0	1,705	1,830	67 x 88 x 36	1½	434	(3) 15	10,350	...	...
20-TAF	1,681.50	1,800	0	80,000	160,000	240,000	Any	...	....	....	....	...	....	0	1,800	1,940	68 x 84 x 42	2	468	(3) 15	12,000	...	...

Suspended Type

1-TACC	$239.50	90	0	4,000	8,000	12,000	Any	...	....	....	....	...	....	0	256	336	16 x 30 x 24	1/10	850	6¼	710	...	..
2-TACC	317.90	182.5	0	8,000	16,000	24,000	Any	...	....	....	....	...	....	0	325	415	18 x 32 x 28	1/6	850	7¾	1,200	...	..
3-TACC	412.50	267	0	12,000	24,000	36,000	Any	...	....	....	....	...	....	0	410	510	18 x 45 x 29	1/4	850	9	2,200	...	..
4-TACC	507.90	364	0	16,000	32,000	48,000	Any	...	....	....	....	...	....	0	545	650	18 x 45 x 36	1/3	500	10⅝	2,750	...	..
5-TACC	552.50	450	0	20,000	40,000	60,000	Any	...	....	....	....	...	....	0	580	690	21 x 46 x 36	1/2	690	10⅝	3,600	...	..
6-TACC	598.60	540	0	24,000	48,000	72,000	Any	...	....	....	....	...	....	0	615	725	24 x 47 x 36	1/2	690	10⅝	3,600	...	..
7½-TACC	760.00	680	0	30,000	60,000	90,000	Any	...	....	....	....	...	....	0	795	910	30 x 60 x 48	¾	535	(2) 12	4,400	...	..
10-TACC	966.40	900	0	40,000	80,000	120,000	Any	...	....	....	....	...	....	0	980	1,100	30 x 64 x 54	¾	404	(2) 15	5,960	...	..
12½-TACC	1,109.40	1,132	0	50,000	100,000	150,000	Any	...	....	....	....	...	....	0	1,125	1,250	30 x 78 x 54	1	448	(2) 15	7,500	...	..
15-TACC	1,247.30	1,352	0	60,000	120,000	180,000	Any	...	....	....	....	...	....	0	1,235	1,360	36 x 75 x 54	1½	495	(2) 15	8,920	...	..
17½-TACC	1,538.00	1,583	0	70,000	140,000	210,000	Any	...	....	....	....	...	....	0	1,505	1,635	36 x 88 x 54	1½	434	(3) 15	10,350	...	..
20-TACC	1,680.60	1,800	0	80,000	160,000	240,000	Any	...	....	....	....	...	....	0	1,620	1,760	42 x 84 x 54	2	468	(3) 15	12,000	...	..

Suspended Type (Band Box Model)

9-HM	$139.50	75	..	3,000	6,000	9,000	Any	...	....	....	....	...	....	0	42	...	13½ x 31½ x 16¾	..	...	(2) 8	450	...	..
12-HM	163.00	100	..	4,000	8,000	12,000	Type	...	....	....	....	...	....	0	50	...	13½ x 31½ x 16¾	..	...	(2) 8	600	...	..
18-HM	222.00	150	..	6,000	12,000	18,000	Specified	...	....	....	....	...	....	0	70	...	16½ x 36 x 18	..	...	(2) 10	900	...	..
24-HM	259.00	200	..	8,000	16,000	24,000		...	....	....	....	...	....	0	90	...	19½ x 37½ x 19	..	...	(2) 10	1,200	...	..

Strang

Strang Air Conditioning Corp.
Kansas City, Mo.

Functions—Cooling, humidifying, dehumidifying, and cleaning.

Cabinet—Strang insulated steel cabinet, walnut finish.

Compressor—Copeland two-cylinder, air-cooled compressor on model 350; Deissler four-cylinder, air-cooled compressor on model 351. Repulsion-induction motor. High side safety cutout.

Blower—Strang.

Air Circulation—Air intake in back, discharge in front. Foul air exhaust provided. Strang discharge grille.

Self-Contained Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	COMPRESSOR Bore & Stroke	Speed R.p.m.	Motor Hp.	Input Watts	Heat Capac. B.t.u.	Humidification Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
350	$.....	...	0	....	....	....	CH_3Cl	4	2 x 2¾	575	1	...	0	..	600	675	44 x 32 x 17½	...	...	..	325	475	...
351	.....	...	0	....	....	....	CH_3Cl	4½	1¾ x 1¾	600	1½	...	0	..	700	775	45 x 33½ x 19½	...	...	..	450	600	...

Cooper's Salesmen to Visit Great Lakes Steamer on Which 'Toppers' Will Cruse

CHICAGO—To sustain interest of dealer and department store sales organizations under R. Cooper Jr., G-E distributor here, in participating in the annual "Toppers Contest Cruise," contestants in the Chicago territory were invited to visit and inspect the *S. S. Seeandbee*—the liner upon which winners will enjoy a week's cruise—at the Navy Pier here recently.

Post card size announcements set up in lower case type, stating that "captain neil mcphail presents his compliments and requests the pleasure of your company aboard the s. s. seeandbee, largest luxury cruising liner on the great lakes . . . ship inspection and smart floor show in the ballroom . . ." were sent to G-E salesmen in the territory.

'Grandad Day' Coincidence

Coincidence recently played right into the hands of the R. Cooper Jr. Inc.'s sales promotional department and gave them a new 100% authentic reason for a special sales stunt. The "heads" of Cooper's promotions (Sam Nides, promotional manager, and J. S. Duncombe, campaign manager) decided on having a "Grandad Day," to wind up the month of June with a sales landslide.

When R. Cooper Jr. was told about the idea, he asked who was to be the "grandfather." "You," was the answer. A couple of days later the wife of R. Cooper Jr.'s son had a baby.

Special Order Forms

Immediately the promotion department ordered printed a quantity of green stickers, addressed to "Grandpappy Dick Cooper, 221 N. La Salle St.," and bearing a date space, and the following "As a memento of this event, here is an order for your grandchild to remember me by." Space was provided for the salesman's name and address, and a parenthetical note was printed at the bottom: "From this date to the end of the month, attach this sticker to a copy of every order and send direct to Dick Cooper."

But to get back to the Toppers contest. Salesmen for this General Electric distributor evidently are all sea-going minded, for as far back as the first of April, five of the R. Cooper Jr. salesmen had sold the $10,000 worth of merchandise required to earn a trip on the *Seeandbee* (claimed to be as wide as the *Leviathan* and nearly two blocks long) when it pulls out from its Chicago moorings August 28.

Five Assured of Cruise

The five cruise-assured salesmen were: Leo Heinlen, Bill McDonald, John Field, Leo Spero, and Elliott Robinson. Many names have been added to the list since then, and according to reports, some of the men who already have sold enough units to earn them a one-way passage ticket (there are none) are going full steam ahead to reach the $10,000 port.

Heading the list of salesmen in the Illinois Northern Utilities, Art Whalen has sold the greatest number of units thus far in the 1936 Toppers contest. From the percentage basis, Ray Finn, followed by Leo Finn, are high salesmen for the I. N. U. organization.

Promotion for Cruise

To keep the salesmen informed on progress being made during the Cooper cruise contest, and to keep before their minds full details about the cruise, bulletins replete with cartoon drawings, and informally written "inspirational" blurbs are issued periodically by J. S. Duncombe, campaign manager.

While the entire Cooper dealer organization salesmen are shooting at *Seeandbee* tickets, members of the company's direct sales organization recently took part in a special June campaign. Titled the Cooper golf tournament, the contest had as its objective: "the opportunity to play a legitimate game of golf on a week day, with a chance to win gold prizes, raffle prizes, a free lunch and dinner, and a carefree day pursing the elusive guttapercha."

Other Quotas Set Up

Salesmen of the water cooler, commercial, and retail departments, district sales managers, and commercial department supervisors were eligible for participation, with sales quotas of $1,500 for the water cooler, commercial, and retail departments, and sales totaling $8,000 (within their districts) for district sales managers and commercial department supervisors.

The golf tournament was scheduled to be held the second week in July at a private golf club.

Westinghouse Dealers Get 'Valugraph' Booklet

EAST PITTSBURGH — Containing a full line illustration of special features, and a chart by which Westinghouse electric refrigerators may be compared with other competitive boxes, The Valugraph Book, new dealer selling aid, has just been issued by Westinghouse Electric & Mfg. Co. here.

This 8½x11-in. booklet pictures the various models of the Westinghouse refrigerator line, and analyzes the interior and exterior features of each box.

1,278 Ranges Ordered For PWA Housing In Atlanta.

ATLANTA—Shipment of 600 ranges, first half of an order for 1,278 Westinghouse electric ranges purchased for installation in the PWA's Techwood and University slum clearance projects here, was received recently by the Georgia Power Co. who will direct and supervise this installation.

Remainder of 678 units will be shipped following the completion of the second housing development. These projects are part of the program of PWA's housing division to replace slum areas with low-rent housing projects of planned design. There are 50 developments on the program in 35 cities.

According to present plans, apartments equipped in this project will not be available to anyone who has an income of more than $100 a month. Typical apartments consist of two, three, and four room units, the latter having two bedrooms, living room, and kitchen. Rent will include water, heat, lights, electricity, and telephone service.

Ranges installed in the Atlanta PWA housing project are model LO-63, with three units, and a standard oven, included in the Westinghouse Golden Jubilee line.

Greene Equals 1936 Quota With Sales Up to June 23

TOLEDO—J. W. Greene Co., Westinghouse distributor for northwest Ohio and southern Michigan, achieved its 1936 quota of electric refrigerator sales on June 23, reports Sales Manager Tom Mason.

$150,000 in Appliances Sold in Two Years By G-E Dealer

FLORENCE, Ala.—More than $150,000 worth of General Electric appliances and equipment, including 250 electric refrigerators and more than 70 commercial installations, has been sold by Hauerwas Electric Co. since its appointment as G-E dealer in this territory a little more than two years ago.

When the Tennessee Valley Authority electrification program opened its drive in Alabama in January, 1934, John and Myra Hauerwas were operating a small radio store. The General Electric appliance line was added a month later, when the company moved to a new and modern location. Matthews Electric Supply Co., Birmingham, is local G-E distributor.

Mr. Hauerwas, an experienced refrigeration engineer, has handled most of the firm's commercial refrigeration business. One of his recent installations was in the dairy of Dr. L. T. Young, in Florence. The job included a CM-6A 2-hp. compressor, pulling a 150-lb. icemaker, a 200-gallon brine tank for aerator, and an H-8 Victor dry storage cabinet.

Kelvinator Recipes Given At Utility Exhibits

CHARLOTTE, N. C.—At demonstrations of Kelvinator electric refrigerators by home economists of Duke Power Co., copies of the new Kelvinator recipe book are given as attendance prizes—but only to women who fill in a certificate and present it at the power company's office.

When they call for their book, the women are given a sales presentation on refrigerators or ranges.

Omaha 'Store' Features Stewart-Warner in Refrigerator Sale

OMAHA — Low-priced Stewart-Warner refrigerators assembled from this year's units in last year's cabinets were used by the Paramount Radio Shop here as "leaders" in a recent sale, which proved to have more drawing power than any other sale the company has ever had, reports George L. Roth, president of the dealership.

Newspaper advertisements in copy boosting refrigerators of "nearly 7-cu. ft. capacity" offered 6.83 cu. ft. capacity Stewart-Warners at $129.50.

Of more than 100 refrigerators sold during the period advertised, only 20 were at the $129.50 price, Mr. Roth says. All the rest sold were higher priced models.

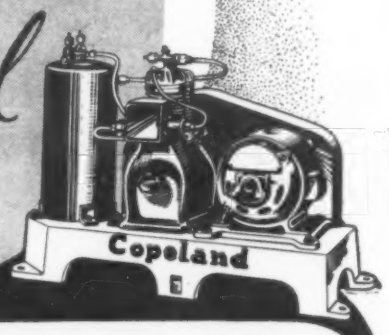
Fifty refrigerators of all its lines, Leonard, Kelvinator, Fairbanks-Morse, Stewart-Warner, and Crosley, were sold by the shop in another sale promoted by an offer of $20 worth of free groceries with each sale, Mr. Roth states. This three-day sale was followed shortly by a third sale during which approximately 50 more refrigerators were sold.

Bristol, Tenn. Dept Store to Handle Crosleys

BRISTOL, Tenn. — New Crosley dealer in this territory is the H. P. King Co., largest department store in this city, which will handle the complete line of Crosley products, according to J. F. Cecil, vice president, Interstate Hardware Co., Inc., Crosley distributor here.

COPELAND

Commercial Refrigeration



Precision-Built TO GIVE YOU TROUBLE-FREE Performance

YOU are selling long-time performance when your customers select Copeland Commercial Units. The many years of dependable operation which we build into Copeland Units, are your assurance that you are building solidly for the future. Copeland distributors, everywhere, appreciate the value of developing and holding customer good-will and know from experience that profits made by selling Copeland, are permanent profits. A few territories are available for this valuable Copeland franchise. Write today!

COPELAND REFRIGERATION CORPORATION

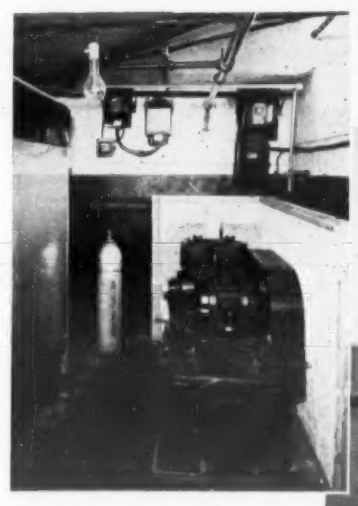
Manufacturers of a complete line of Household and Commercial Refrigeration

Holden Ave. at Lincoln . . . DETROIT, MICH.

Copeland

DEPENDABLE Electric REFRIGERATION

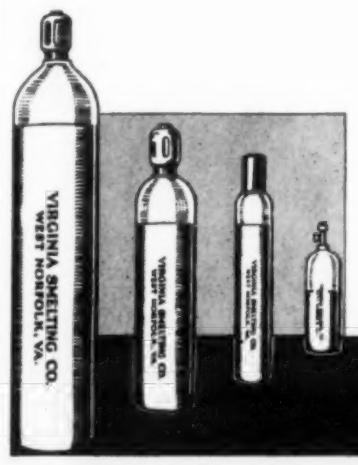
V-METH-L FOR Air Conditioning



This 5 H.P. refrigeration unit operates on V-METH-L. Cools and dehumidifies this office building located at West Norfolk, Virginia — in one of the most humid areas of our coastline.

For restaurants, shops, and small office buildings

V-METH-L (Virginia methyl chloride) is an ideal refrigerant for moderate sized air conditioning jobs. Pleasant odor—non-corrosive to copper, brass, iron. Regularly used in flanged copper tube construction. Used with perfect safety up to 2½ lbs. per 1,000 cubic feet of space.



New use of brine in air conditioning

ESOTOO (liquid sulphur dioxide), made by the makers of V-METH-L, can be safely used for air conditioning even with a spray washer, provided an absorbent brine is used. Send for reprint of article describing such use.

Prompt Delivery from 72 Distributing Points

VIRGINIA SMELTING CO.
WEST NORFOLK, VIRGINIA

ELECTRIC
REFRIGERATION NEWS

Registered U. S. Patent Office
Copyright, 1936, Business News Pub. Co.
Published Every Wednesday by
BUSINESS NEWS PUBLISHING CO.
5229 Cass Ave., Detroit, Mich.
Telephone Columbia 4242.
Cable Address: Cockrell—Detroit

Subscription Rates
U. S. and Possessions, Canada, and all countries in the Pan-American Postal Union: $3.00 per year; 2 years for $5.00. All other Countries: $5.00 per year.
Notice: Please do not pay money to strangers claiming to represent this paper. We employ no subscription solicitors. Send orders and remittances by mail.

F. M. COCKRELL, *Publisher*

GEORGE F. TAUBENECK, *Editor*
PHIL B. REDEKER, *Managing Editor*
THEODORE T. QUINN, *Assistant Editor*
WINIFRED HUGHES, *Assistant Editor*
ELEANOR BLUM, *Assistant Editor*
K. M. NEWCUM, S. L. POTTS, and J. J. MURRAY, *Contributing Editors*

GEORGE N. CONGDON, *Business Manager*
ROBERT P. NIXON, *Asst. Business Mgr.*
HELEN K. GILMORE, *Asst. Business Mgr.*
R. T. CARRITHERS, *Spec. Representative*

JOHN R. ADAMS, *Production Manager*
JEAN H. ADAMS, *Subscription Manager*
LOLA E. DEW, *Circulation Manager*
WINIFRED MERSON, *Spec. Representative*

Member, Audit Bureau of Circulations
Member, Associated Business Papers

VOL. 18, NO. 13, SERIAL NO. 384
JULY 29, 1936

Air Conditioning Costs Money and Is Worth the Price

"COOLING and dehumidification by refrigeration — expensive to install and operate at present, and by no means necessary to reasonable indoor comfort."

So says an advertisement signed by Rolland J. Hamilton, president of American Radiator Co., which appeared in a Detroit newspaper about the time the blistering hot wave hit this area.

We hazard a guess that Mr. Hamilton was enjoying the comforts of some mountain resort when his message was read by sweltering Detroiters.

The advertisement advises the reader to "Ask your heating and plumbing contractor to explain in greater detail these various points of home air conditioning, and you will know what few other people know—*the complete truth about this much discussed and much confused subject.*"

We wonder how many readers called up their heating and plumbing contractor to find out how to get *"reasonable indoor comfort"* without incurring the *"expensive"* cooling and dehumidification by refrigeration.

In our opinion, it is just that sort of advice which makes air conditioning a *"much confused subject."* Sooner or later the public must learn that it will cost money to keep cool in summer just as it has learned that it must pay to keep warm in winter and that the expense is justified in terms of health and efficiency as well as bodily comfort.

While all heat records were broken in Detroit, newspaper reports indicate that the devastating temperatures were more severe and lasted much longer in many other sections of the country. But even in Detroit the loss of life reached the proportions of a major disaster.

When we figure the cost of hot-weather *losses*, the cost of cooling begins to look more reasonable. And certainly the public needs to be told about the dangers and the devitalizing effects of excessive heat, just as it was necessary to show the need for refrigeration of food.

Worried mothers who have watched the ravages of heat on babies, doctors and nurses who try to check the toll of summer sicknesses, everybody who has to stay at home and on the job throughout the oppressive, enervating hot spells—all know that high temperatures mean *loss.*

Loss of energy, loss of sleep, loss of appetite, *loss of life*—those are real losses and the public knows it.

The fact of the matter is that the public has long recognized the *need* for some means to protect itself against the bodily exhaustion which practically paralyzes a large portion of the U. S. every summer.

The principal obstacle to overcome was well-stated by a Calcutta dealer and reported by George Taubeneck in last week's issue of the NEWS. He said:

"Everybody wants air conditioning, but nobody wants to pay for it."

What the public wants, and will gladly accept, is some good convincing reasons why the average citizen can afford to spend the money for comfort cooling. There is no tradition for the purchase of air conditioning, just as there was none a few years ago to justify buying an automobile.

Twenty years ago it was a brave man indeed who bought a car on a modest income. He had to face the criticism of his employer, his neighbors, and friends, on the score that he was recklessly extravagant and might better spend the money for some more worthy purpose.

It required astute salesmanship to convince the public that every family could afford to own a car. Millions *wanted* a car but it was a major problem in most homes to *justify* the expenditure.

The publisher of this paper has had some good demonstrations, in his own home and office, of this important factor in the psychology of the public. The remarks of visitors show very clearly their attitude toward air conditioning.

Comments of business men who visited the air-conditioned office of the NEWS during the recent torrid weather might be classified and summarized by two expressions: (1) Gee, isn't it wonderful! (2) How can you afford it?

There were many variations of the two themes. A salesman became so enthusiastic that he built up a master sales talk showing why every office should be air conditioned. He was merely elaborating comment No. 1.

Curious indeed are some of the elaborations of theme No. 2. One visitor, an old-time friend of the publisher, launched into a lecture on the extravagant manner in which this business is operated. Another expressed grave concern over the future of a country whose citizens become accustomed to too much comfort.

In answer to the first comment we might point out that the NEWS has been running full speed regardless of the weather. Referring to the second viewpoint, the publisher feels that he has already lost enough sleep (for one reason or another) to do a natural lifetime and that he has no qualms of conscience when sleeping in his air-cooled bedroom.

It is a foregone conclusion that American homes and offices, stores and factories, will eventually be air conditioned. How rapidly and how well the job will be done is mainly a matter of salesmanship.

According to the advertisement of the American Radiator Co., the heating and plumbing contractor is being told (and will tell the public) that "cooling and dehumidification by refrigeration is expensive and by no means necessary." If so, then the heating and plumbing contractors who look to this large supplier for leadership aren't going to be much help to the industry or to the public.

We still believe that it is going to be up to the specialty-selling type of dealer who understands refrigeration and who knows how to sell it, to do the job of selling the public on the *economic reasons for buying air conditioning.*

The 10th Anniversary Number of the News Sept. 9, 1936

The 10-year history of ELECTRIC REFRIGERATION NEWS coincides with the period in which the industry has had its phenomenal growth.

Outstanding events and the most important contributions to the industry development by individuals and companies during the past decade will be reviewed in the 10th Anniversary Number of the NEWS, Sept. 9, 1936.

Readers are invited to furnish information regarding the activities of industry pioneers and facts about significant events and movements which affected the character and direction of the industry's progress. Cooperation is urgently requested to the end that proper credit may be given where due and that the record may serve as a guide to future historians.

This issue will have extra circulation, especially in all foreign markets where there is an active demand for background information on the part of many business men who are now becoming intensely interested in American refrigeration and air-conditioning equipment.

Letters

Technical Data Needed By French Servicemen

Societe Francaise des Thermostates
Brevets et Appareils de Regulation
Automatique "TEDDINGTON"
83, Rue D'Amsterdam
Paris

Re: Technical information needed in France

Paris, July 10, 1936.

Publisher:

The publication of our letter of May 28 in the June 24 issue of NEWS, has brought us a number of letters and telephone calls from friends which shows the interest aroused by technical information in France.

We quite agree with Mr. Taubeneck that a French translation of the MASTER SERVICE MANUAL would enjoy a good market in French-speaking countries such as French Colonies, Belgium, Switzerland etc . . . There are also a number of other countries such as Balkans, Palestine, the near East where French is most currently spoken next to the mother-tongue, particularly by people having an elementary education.

In contemplating the translation of a SERVICE MANUAL, it must be remembered that in Continental Europe, commercial installations far exceed household installations both in terms of units and in currency. A manual exclusively devoted to domestic cabinets would not fully satisfy the need of technical information.

Large American refrigeration companies operating in this country through branches, affiliated companies supply their organizations with manuals translated in French. But quite often these books are treated as "confidential" and with few exceptions are seldom handed over to installation or servicemen. Furthermore, they deal exclusively with the manufacturers' products so that readers have but a narrow and limited knowledge.

Local manufacturing is steadily expanding together, with an increasing number of assemblers and independent servicemen. For this class of trade there is no technical data available besides whatever little information could be obtained through practice during a temporary connection with one of the leading firms.

Under such conditions you certainly appreciate that what will be welcomed will be a combination Domestic and Commercial Service Engineering Manual.

Through our line of business we are exceptionally well located to know of the technical weakness of an unbelieveable large percentage of the refrigeration traders in France.

Had we had the pleasure to meet Mr. Taubeneck in Paris, we would have shown him letters picked at random in our files for his perusal.

As stated in another letter, the writer has been connected for over ten years with Delco Light Co., and with Frigidaire Corp., originally as an engineer and in a supervision position in the latter years. On his frequent visits in United States, the matter of educating servicemen throughout Europe was often discussed at the factory and considered of paramount importance. He is much indebted for his business and technical experience to his former superiors E. G. BIECHLER, C. F. KETTERING and many others who are included at present amongst his best American friends.

Should you experience any difficulty whatsoever for the translation in French of American manuals, please do not hesitate to use his services. He will only be too glad if he could be of any assistance to you and to reciprocate the facilities and the hospitality he has always received from all his friends in America.

G. N. GODEAU,
Managing Director.

A Request for Books from The American Consul At Brussels

Department of State
Washington

July 22, 1936.

Sirs:

There has been received from the American Consul at Brussels, Belgium, a request for one copy of each of the following publications:

"Refrigeration and Air Conditioning Directory, 1936"

"Refrigeration and Air Conditioning Market Data"

These are desired for use in the trade promotion work at his office, and it would be greatly appreciated if you would furnish them. It is suggested that, if you can do so, they be sent to Room 118, Division of Foreign Service Administration, Department of State. It would be helpful if the outer wrapper bear the above file number.

HERBERT C. HENGSTLER,
Chief, Division of
Foreign Service Administration.

Springs for Zerozone Expansion Valves

Electric Refrigerator Sales & Service
All Makes Repaired
Fairbanks-Morse Electric and
Superfex Kerosene Refrigerators
Ashkum, Ill.

Gentlemen:

Just got copy of MASTER SERVICE MANUAL, with one-year subscription to the NEWS, and find it of great value.

Will you please have someone, somewhere, rush me two sets of springs for Zerozone automatic expansion valves. Just can't find anyone who carries these antiques.

Please put us on your catalog mailing list. W. J. FROMUTH.

Answer: Your request was phoned to W. G. von Meyer, sales manager of Zerozone Refrigeration Co. in Detroit. He promised to send the springs immediately.

Approval from Tunis, North Africa

Comptoir de la Machine a Coudre
Etablissements Tabona
E.D. & J. Sitbon, Proprietaires
Direction: 22, Avenue Roustan
Tunis, North Africa

Gentlemen:

I have received a few days ago the MASTER SERVICE MANUAL and I am getting now regularly the ELECTRIC REFRIGERATION NEWS for which I have put in a yearly subscription.

I have found them both to be of great help and will sincerely recommend them whenever possible.

I will appreciate it very much if you will kindly place my name on your free mailing service list.

ED. D. SITBON.

Books on Air Conditioning

June 25, 1936.

Publisher:

Please accept my congratulations for your honest and fearless editorial policy. This policy was exemplified in the Grunow case.

I have just returned from Chicago where I spent 10 days in refrigeration service training. There were men from seven states and Canada at this Servicemen's training class. To my surprise, I was the only one that was a subscriber to your wonderful paper—The ELECTRIC REFRIGERATION NEWS. I told them of the valuable information contained in E.R.N. and that they should have this paper. That it was well worth the cost. They all seemed very much interested and most of them have taken your address as given by me.

However, several of them, friends of mine, I promised that I would provide you with their addresses and that I thought possibly that you would provide them with a sample copy together with a subscription blank if it is your policy to do this. I feel certain you will secure several new subscriptions and that it will be a decided favor to them. I am inclosing their names and addresses on a separate sheet.

Also I should like a little information that I feel you are better qualified to render than anyone else. I am, as you probably surmise, a refrigeration serviceman. I am quite interested in air conditioning. I desire to secure a reliable or dependable book or books pertaining to the salesmanship, installation, estimating, servicing, etc. of air-conditioning equipment. I know that there are quite a few books pertaining to this subject on the market, but inasmuch as I am unable to determine the reliable from the other, and not being able to purchase unneeded material I should greatly appreciate it if you could inform me the best books and where I might obtain same.

For any information that you might give I will be very grateful. I am always glad to say a "good word" for your paper and recommend it to anyone in this industry. I am enclosing addressed stamped envelope.

James O. Bobbs, P. O. Box 17,
Vicksburg, Miss.

Answer: There are really no standard textbooks on air-conditioning selling, but there are some good books dealing with fundamentals of air-conditioning engineering and installation practices. Some of these are:

"Air Conditioning and Engineering," available from American Blower Corp., 6000 Russell St., Detroit, Mich.

"The 1936 Guide of the American Society of Heating and Ventilating Engineers," 51 Madison Ave., New York City.

"Air Conditioning" by James A. Moyer and Raymond U. Fittz, McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York City.

"Heating and Air Conditioning" by Allen and Walker, McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York City.

"Practical Air Conditioning" by Harold L. Alt, Domestic Engineering Co., 1900 Prairie Ave., Chicago, Ill.

"Air Conditioning" by S. R. Lewis, Keeney Publishing Co., 1900 Prairie Ave., Chicago, Ill.

Around the World

With George F. Taubeneck

Bombay, India

"No export manager sitting comfortably in an air-conditioned office back home can hope to understand the Indian market unless he knows something about the force which motivates every movement of their lives."

No Melting Pot

Bombay contains almost as many different races, cultures, types, classes, and grades of humanity as does Singapore—and certainly more per square yard. And if to "humanity" we add all other living things of the animal kingdom, this catch-all city is surely the densest jungle of strangely diverse living, moving, sweating animal life to be found in many years of travel.

But no melting pot, this. Society is strictly stratified. To borrow a phrase from an old American game, "shinny on your own side" seems to be an inviolable rule here. Representatives of the myriads of tribal entities and tongues and faiths which go to make up the vast clutter which is India come to Bombay, but each racial group, each religious sect, each social caste keeps to itself.

All white men who go to Bombay soon feel like kings. Deference is their heritage; soon it seems to be their right. On every hand the white man is saluted, bowed to, waited upon; doors are opened for him, coffee or tea is brought to him, people scramble out of his path. In all the Orient, the white worker (he is never anything but a white-collar worker) attains, by hypothesis, a social status he could never claim at home unless he had high military or ecclesiastic ranking.

Among the dark-skinned races, the stratification and the obeisances continue right on down through innumerable classifications. The proud native princes, the inbreeding Parsees, the successful Mohammedans, the haughty Brahmins, each claim precedence and deference.

Perhaps that's one reason—this is a brand new theory, I believe, and doughty scholars or lifelong inhabitants may find it easy to refute—for the unparalleled animal, insect, and microbe population of Bombay: even those of the lowest caste can feel themselves above the teeming billions of rats, dogs, birds, cockroaches, and insectivora which infest Bombay. (Yes, I know about India's Sacred Cows. I've seen the extremist Jains, who muffle their faces lest they inhale, and kill, an unseen form of life, and who carefully refrain from stepping on an ant. But also I have seen the cruelty practiced on beasts of burden, and know that while the faithful Hindu may worship the concept of animal life, and go to ridiculous lengths to prove his piety in this regard, he gives many concrete evidences of obtaining compensation for obeisances to "superior" human beings by his treatment of and feeling toward the animal life that he refuses to kill.)

No matter how harshly our judgment may fall on certain phases of Indian "civilization" we must be quick to admit that it holds endless fascination. And no place in India can one study so many different facets of this bizarre human development as in Bombay, whither all come, but none mix.

* * *

Gateway City

Bombay is an island, like many of the world's cities which have figured so prominently in recorded history. It is roughly four miles wide and 11 miles long. The Portuguese were the first to claim it for Western civilization, but found little use for it. In the middle of the sixteenth century it was ceded to England, as part of the marriage dowry Catherine of Braganza brought to Charles II. The latter, in turn, handed it over to the East India Co. for an annual rental of 10 pounds ($50); a transaction which reminds all good Americans of the Indians selling Manhattan Island to the Dutch for $23 worth of trinkets.

Today Bombay is second only to Calcutta as a port and commercial center of that portion of the East known vaguely as "the Indies." It has a population of 1,300,000, an important railway terminal, and an all-year-round port of call for shipping lines of many nations. It is a city of trade and commerce rather than industry, although the latter is growing and developing steadily.

The casual tourist will not find buildings and monuments of beauty in Bombay comparable to similar sights concentrated in Calcutta and Delhi, or scattered among less advanced habitations in India. True, he will find the Gateway of India, an imposing archway through which all incoming Viceroys pass in triumph on their welcome to India. He will find a magnificent hotel in the Taj Mahal.

In the bazaars are rugs and carpets of gorgeous pattern, precious metals worked into delicate designs, shawls and capes of rich ornamentation, pearls and precious stones—and matchless handiwork which is the product of hereditary craftsmanship, generations of handed-down knowledge and skill.

But it's the *people* and their habits and manners and style which make Bombay interesting; and after all, the proper study of mankind is man.

Curiously, the traveler will find little of what Americans call "civic pride" in Bombay. Certainly, the intense loyalties of Calcutta or Delhi citizens are not to be found here. Your Bombay man of position and influence will discuss with you the weird modes of living to be found in Bombay with utter candor. He himself feels superior to the surrounding scene, just as does the traveler (in spite of himself). The plight of less favored fellow citizens does not concern him at all. He lives his life, runs his own business and affairs, and looks at his strange fellow creatures as impersonally as we regard the inhabitants of the zoo. Instead of feeling pity or shame, or the burning zeal of the reformer, the white man, the Parsee, the Mohammedan man of influence simply feeds his ego at this fount of degeneracy.

If you protest at what you see or find, he will tell you, calmly, that better men than you have batted their heads in vain against the wall of Hindu inertia; that the only thing to do is to accept conditions as you find them, ignore them as much as possible, and mind your own business.

* * *

Everything but Chanel

Bombay is a city of smells. Not all are bad, either. The true Indian has fine sensitivity to odors, and spends good rupees for olfactory satisfactions. (I have already mentioned Mr. PHERWANI and his interjection of *perfuming* as a seventh function of air conditioning.)

On the streets you are fully as likely to catch wind of pleasant sandalwood or musk, of spices or the odd aromas from the hoopah (which filters Oriental tobacco blends through water) as you are of decay and filth.

Chanel's costly perfumes are rarely whiffed, but one gets nostril news of many and strange places to compensate for the absence of the delicate and expensive Parisian odors, which, as affected by our womankind, provide us Americans with our only adventure in smell.

Colors, like smells, abound in Bombay. The Indian women have a keen sense of the propitious in contrast, so that their use of bright shades and rich fabrics which would seem glaring in the Occident seem perfectly justified and picturesque over here. When color movies become perfected, you're likely to see Bombay as the locale for many super-features.

The *sari*, national dress of Indian women—whether Hindu, Parsee, or Mohammedan—is a sort of wrapper, or robe, which has for its best feature a shawl-like mantle for the head and shoulders.

Rich embroideries, sheer muslins, neat ornamentation, and apt blending of pastel shades combine to make the *sari* the most feminine of all garbs I have seen. Women of means have *saris* of cloth woven from silver and golden threads; and their inlaid lacquered bracelets and fine sandals are something to see too.

Most Westerners do not find the Indian women, as a whole, particularly beautiful. But their luminous dark eyes, their softness and grace, and their picturesque dress make them easily the most attractive of the Eastern racial groups—some few of them are genuine stunners.

City of Toleration

Singapore became cosmopolitan by virtue of its location; Bombay because of its religious tolerance.

One of the first tenets promulgated by the East Indian Co. when it took over Bombay was that it should be an asylum for the persecuted faiths, that religious freedom would be maintained. And it was.

So it came about that when the Mohammedans conquered Persia, the followers of Zoroaster, the fire worshipper, came down to Bombay where they could continue their religious rites in peace. Their descendants became the wealthy, influential Parsees of present-day Bombay.

Ever-persecuted Jews found refuge in Bombay, as did Portuguese Catholics. The Jains moved in, Mohammedans came down, Arabs and Armenians came and stayed, Buddhists founded a colony, the bearded Sikhs migrated from the Punjab, Brahmins stalked in, and even remnants of the aboriginal animists crept out from their jungle hide-aways to pick up crumbs.

Strangely enough, this one corner of a land which had been ravaged by wars fought in the name of religion for more centuries than we have record, has remained a model of tolerance. Today, a persevering student of sociological theology could write a new *Golden Bough* based on observations which could be made entirely within Bombay.

* * *

Too Much Religion

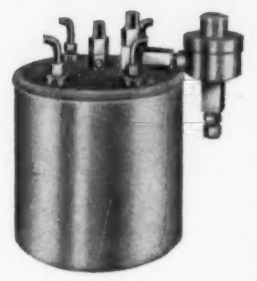
There is a passage in a Noel Coward play—"Private Lives" I believe,—in which two weary travelers meet and yawn at each other in the following manner:

"How was China?"

"Veddy large."

(*Continued on Page 21, Column 1*)

Hot Tropical Weather Emphasizes Superiority of Temprite Beer Coolers



Customers served from Temprite Beer Coolers during the recent intensely hot weather obtained their glass of beer at exactly the right temperature—sparkling, appetizing, with correct depth of color and as the brewer made it.

This hot weather test served to show up by contrast, Temprite's superiority over ordinary beer cooling equipment with its excessive foaming, warm beer, off-flavor beer, fluctuating temperatures, waste and - - dissatisfied customers.

Temprite equipment on the other hand means satisfied customers, more profit, and more business, and that, in the last analysis, is the Temprite story.

Get this story over to your prospects - - you will find interested listeners. Thousands of dispensers have never had the outstanding merits of Temprite explained to them. Here is your opportunity and now is the best selling time of the year.

TEMPRITE 50° 40° INSTANTANEOUS

TEMPRITE PRODUCTS CORPORATION
1349 EAST MILWAUKEE AVE. - DETROIT, MICHIGAN
ORIGINATORS OF INSTANTANEOUS LIQUID COOLING DEVICES

And that isn't all—this refrigerator comes equipped with a General Electric motor.

That appeals to me. I know that General Electric motors must be the best.

SALES ARE MADE MORE EASILY IF YOU HAVE G-E MOTORS ON YOUR REFRIGERATORS

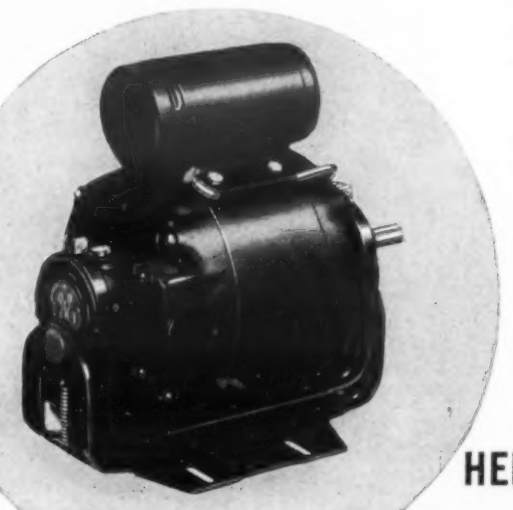
SALES records show that today the American public is buying more expensive merchandise than it did a few years ago—that your customers are greatly influenced by high quality in their choice of a refrigerator. Dealers and manufacturers who can label their refrigerators "high quality" in as many ways as possible make selling that much easier.

Even though your refrigerators have an excellent reputation, national surveys indicate that G-E motors will add to their customer appeal; for General Electric's high standards of quality are well known, and G-E motors have an enviable service record for quiet, dependable operation. If your refrigerators are equipped with G-E motors, you will encounter less sales resistance, because your customers will have added conviction that the refrigerators will give them the trouble-free service they want.

Automatic Belt-tightener Base—This exclusive G-E development automatically maintains just enough belt tension to prevent slippage. It increases customer satisfaction by lowering operating expense, reducing belt and bearing wear, and operating more quietly.

Rubber Mounting—G-E motors run quietly and smoothly in a mounting of live rubber. This is another feature that helps you sell.

Long, Care-free Life—Indestructible cast-aluminum rotor, stator windings treated to resist moisture and heat, and a time-proved switch protect your profits by reducing service calls.



Can you afford not to avail yourself of this added sales appeal?

General Electric, Dept. 6A-201, Schenectady, New York.

LET G-E MOTORS HELP YOU SELL

GENERAL ELECTRIC 070-138

Servel

Servel, Inc.
Commercial Refrigeration Division
Evansville, Ind.

Functions — Self-contained type: cooling, dehumidifying, and cleaning. Remote floor type: heating, cooling, dehumidifying, and cleaning. Suspended type: cooling and dehumidifying. Duct type: heating, cooling, humidifying, dehumidifying, and cleaning.

Cabinet—Self-contained and remote floor types: Servel steel cabinet, walnut finish standard. Suspended and duct types: Servel steel cabinet with green lacquer finish. Self-contained and suspended cabinets are insulated.

Compressor—Self-contained: Servel two-cylinder, water-cooled compressor. Wagner motor with manual push-button disconnect motor overload protection. High side safety cutout. Pressure control.

Blower—Self-contained, remote floor type, and duct type: double-centrifugal blower with direct-connected Wagner motor. Suspended type: propeller blade type blower with direct-connected Wagner motor.

Air Circulation—Self-contained and remote floor types: air intake in top, air discharge in top, fresh air intake optional. Suspended and duct types: air intake in rear, air discharge in front.

Cooling System—All types: direct expansion only. Servel copper cooling coils.

Heating System — Servel copper coils. Heating capacity: model ACO-301, 125,000 B.t.u.

Type of Humidifying—Spray nozzle.

Air Cleaning Medium—American and Owens-Illinois filter.

Controls — Thermostatic expansion valve on all models; water-regulating valve on model ACFU-101.

Special Features — All models: header coil, inserted expansion valve bulb, heat exchanger; model AC-101, variable-pitched fan blades.

Self-Contained Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	COMPRESSOR Bore & Stroke	Speed R.p.m.	Motor Hp.	Input Watts	Heat Capac. B.t.u.	Humidification* Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
ACFU-101	$.....	164.94	0	....	....	12,300	Freon	6	2⅛ x 2	465	1	1,270	0	0	557	650	31 x 67½ x 15¾	1/60	1,140	(2) 6	600	...	130

Remote Floor Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification* Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
ACFD-101	$.....	164.94	76.55	...	...	12,300	Freon	...	....	....	....	...	....	0	222	310	31¼ x 43 x 13¼	1/60	1,140	(2) 6	600	...	130

Suspended Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification* Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
AC-101	$.....	160.0	0	....	....	12,206	Freon	...	....	....	....	...	....	0	146	201	22½ x 22½ x 20	1/15	1,140	...	1,650†	...	140

†Adjustable, 1,650 is maximum.

Duct Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification* Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
ACO-301	$.....	437.14	192.72	....	....	42,000	Freon	...	....	....	....	...	....	2	441†	495†	18 x 50½ x 37½‡	½	1,140	(2) 8x10	2,700	...	600

*Temperature of water used: Tap. †With heating attachment, 640 lbs. net; 755 gross. ‡With heating attachment, width is 55⅝ in.

Sturtevant

B. F. Sturtevant Co.
Hyde Park, Boston, Mass.

Functions—Heating, cooling, humidifying, dehumidifying, and cleaning.

Cabinet—Sturtevant steel cabinet, paint finish. Not insulated.

Blower—Sturtevant blower, V-belt drive.

Air Circulation—Air intake, front and rear; air discharge, top and front. Fresh air intake provided.

Cooling System—Direct expansion and circulating cold water. Sturtevant copper coils.

Heating System—Sturtevant copper coils. Can use coils with hot water.

Type of Humidifier—Spray.

Air Cleaning Medium—Filter type, make optional.

Controls—Air by-pass dampers.

Duct Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
1000	$.....	...	...	....	....	39,000	...	...	....	....	39,000	7.82	1.5	...	...	...	.....	...	...	..	1,000	...	...
2000	.....	...	...	....	....	78,000	...	...	....	....	78,000	15.64	3.2	...	...	...	.....	...	...	..	2,000	...	...
3000	.....	...	...	....	....	117,000	...	...	....	....	117,000	23.46	5.0	...	...	...	.....	...	...	..	3,000	...	...
4000	.....	...	...	....	....	156,000	...	...	....	....	156,000	31.28	5.0	...	...	...	.....	...	...	..	4,000	...	...
5000	.....	...	...	....	....	195,000	...	...	....	....	195,000	39.10	6.0	...	...	...	.....	...	...	..	5,000	...	...
6000	.....	...	...	....	....	234,000	...	...	....	....	234,000	46.92	6.0	...	...	...	.....	...	...	..	6,000	...	...
8000	.....	...	...	....	....	312,000	...	...	....	....	312,000	62.56	8.0	...	...	...	.....	...	...	..	8,000	...	...
10000	.....	...	...	....	....	390,000	...	...	....	....	390,000	78.20	8.0	...	...	...	.....	...	...	..	10,000	...	...

Synchromatic

Synchromatic Air Conditioning Corp.
Milwaukee, Wis.

Functions—Cooling, dehumidifying, heating, humidifying, and cleaning.

Cabinet—Housing is of auto body steel, built on electrically welded steel frame. Housing is lined with felt. Exterior finish in green.

Blower—Double-inlet, squirrel-cage, slow-speed fan, with scroll housing and electric motor all mounted on a rubber-suspended chassis.

Air Circulation—Air inlet at end, air discharge at top. Fresh air intake as desired.

Cooling System—Direct expansion or cold water. Finned copper cooling coils.

Heating System—Steam or hot water. Finned copper coils.

Type of Humidifier—Spray jet humidifier connected through an electric water valve and strainer to normal water supply.

Air Cleaning Medium — Viscous treated spun wool filter.

Controls — Thermostat, humidistat, transformer, and solenoid valve.

Duct Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	COMPRESSOR Bore & Stroke	Speed R.p.m.	Motor Hp.	Input Watts	Heat Capac. B.t.u.	Humidification Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
S-10FR ...	$510.00	....	....	....	....	30,000	...	...	.....	...	...	...	100,000	..	...	600	.....	..	...	...	1,400	...	...
S-15FR ...	605.00	....	....	....	....	48,000	...	...	.....	...	...	...	155,000	..	...	900	.....	..	...	...	1,700	...	...
S-20FR ...	752.00	....	....	....	....	96,000	...	...	.....	...	...	...	190,000	..	...	1,100	.....	..	...	...	2,200	...	...
S-30FR ...	813.00	....	....	....	....	120,000	...	...	.....	...	...	...	290,000	..	...	1,100	.....	..	...	...	3,200	...	...

Thermal Units

Thermal Units Mfg. Co.
Chicago, Ill.

Functions — Self-contained type: cooling, dehumidifying, and cleaning; heating and humidifying available on models 50-SC, 100-SC, and 150-SC. Suspended type: heating, cooling, and dehumidifying.

Cabinet—Self-contained type: Thermal Units steel cabinet, burled walnut or crinkle-lacquer finish, insulated. Suspended type: Thermal Units steel cabinet, aluminum finish, not insulated.

Compressor — Self-contained type: Thermal Units eight-cylinder compressor, air cooled on model 58-R, water cooled on SC models. Century, Emerson, or Wagner motor. Trumbull Electric Co. overload protection. Penn high side safety cut-out. Pressure-type compressor control.

Blower—Self-contained type: Torrington aluminum blower. Baldor motor, direct drive on models 58-R and 50-SC. No blower motor, belt drive on 100-SC and 150-SC. Suspended units: Thermal Units four-blade propeller fans. Baldor blower motor, direct drive.

Air Circulation—Self-contained type: air intake in sides, air discharge in top. Fresh air intake optional. Uniflo discharge grille. Suspended type: air intake in rear, discharge in front. No fresh air intake or discharge grille.

Cooling System — Self-contained type: direct expansion Thermal Units copper coils. Suspended type: direct expansion or circulating cold water. Thermal Units one-piece aluminum casting coils.

Heating System — Self-contained type: Thermal Units copper coils, can be used with hot water. Heating capacities: model 50-SC, 18,000 B.t.u.; 100-SC, 36,000; 150-SC, 54,000. Suspended units: Thermal Units one-piece cast aluminum coils, can be used with hot water. Heating capacities: model 12, 41,300; 16, 73,100; 20, 136,100; 24, 195,600; 30, 285,300.

Type of Humidifier—Spray.

Air Cleaning Medium—Wilson & Co. filter.

Controls—Self-contained type: thermostatic expansion valve; humidistat, thermostat, liquid line solenoid valve, and air by-pass dampers if desired; water-regulating valve on SC models. Suspended type: thermostatic expansion valve or float valve; liquid line solenoid valve; thermostat if desired.

Self-Contained

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	COMPRESSOR Bore & Stroke	Speed R.p.m.	Motor Hp.	Input Watts	Heat Capac. B.t.u.	Humidification* Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
58-R	$395.00	60	0	1,620	3,780	5,400	Freon	5	9/16 x ⅞	1,750	½	640	0	0	376	450	40 x 35 x 17	1/15	1,150	7½	290	545	120
50-SC	375.00	60	40	1,800	4,200	6,000	Freon	5	9/16 x ⅞	1,750	½	640	18,000	12	330	400	36 x 30 x 14	1/20	1,150	6	300	545	60
100-SC	550.00	120	80	3,600	8,400	12,000	Freon	10	25/32 x 1 1/10	1,150	1	1,080	36,000	24	525	650	45 x 35 x 18	0	1,150	(2) 9½	600	500	0
150-SC	675.00	180	120	5,400	12,600	18,000	Freon	12	25/32 x 1 1/10	1,750	1½	1,575	54,000	24	600	725	49 x 35 x 18	0	1,150	(2) 9½	900	500	0

Suspended Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification* Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
12	$125.00	42	42	2,592	6,048	8,640	†	...	3,600	7,200	10,800	6	....	0	150	220	15 x 21¼ x 28	1/10	1,750‡	12	975	975	120
16	148.00	70	70	4,608	10,752	15,360	†	...	6,400	12,800	19,200	9	....	0	215	295	19 x 25¼ x 31	⅛	1,150‡	15	1,740	1,020	125
20	205.00	145	145	7,200	16,800	24,000	†	...	10,000	20,000	30,000	12	....	0	275	365	22¾ x 29¼ x 31	⅙	1,150‡	19	2,710	970	175
24	265.00	168	168	11,472	26,768	38,240	†	...	15,930	31,870	47,800	15	....	0	360	470	27 x 34 x 31½	¼	1,150‡	22	4,320	1,080	250
30	340.00	245	245	15,200	35,200	50,400	†	...	21,000	42,000	63,000	18	....	0	470	600	33 x 37½ x 32	⅓	1,150‡	24	5,700	980	500

*Temperature of water used: 50° or over to hot. † Ammonia, Freon, brine, or water. ‡ All models variable, 4-speed motors.

Zephyr Air

Savage Arms Corp.
New York, N. Y.

Functions—Cooling, dehumidifying, heating, humidifying, cleaning—all models.

Blower—Aluminum blower wheel.

Cooling System—Direct expansion or chilled water.

Type of Humidifier—Air washing in all models.

Air Cleaning Medium—Air washing and scrubber plates.

Self-Contained Floor Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrigeration Capacity Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
60	$.....	....	....	....	....	9,000	Freon	...	....	....	....	..	....	6	...	...	.....	..	...	...	250	...	...

Remote Floor Type

61	$.....	....	....	....	....	9,000	Freon	...	....	....	....	..	....	6	...	...	.....	..	...	...	250	...	...
85	.....	....	....	....	....	18,000	Freon	...	....	....	18,000	4½	....	12	...	...	.....	..	...	...	600	...	...

Duct Type

86	$.....	....	....	....	....	36,000	Freon	...	....	....	36,000	9	....	24	...	...	.....	..	...	...	1,200	...	...
88	.....	....	....	....	....	60,000	Freon	...	....	....	60,000	15	....	48	...	...	.....	..	...	...	2,000	...	...
90	.....	....	....	....	....	120,000	Freon	...	....	....	120,000	30	....	96	...	...	.....	..	...	...	4,000	...	...

Around the World

With George F. Taubeneck

(*Continued from Page 19, Column 3*)

"And Japan?"

"Veddy small."

Had the interrogation proceeded as far as India, the answer would likely have been:

"Veddy depressing."

India is depressing because of its extreme poverty, its execrable filth, and its abject hopelessness. Most of all it is depressing because its inhabitants have brought their own unfortunate condition upon themselves, *and insist on maintaining it.*

It is a classic example of religion gone wrong, of the tyranny of superstition and ignorance.

Difficult indeed it is to picture in words the misery of the mud villages on the plains; the self-abnegation of individual towns and cities. I took more than 200 pictures on the way across India; which, had they materialized, would have constituted a macabre Album of Horrors. But the devastating heat melted the exposed films before I could get them developed, and so my pictorial record of India is deplorably scanty and incomplete.

However, this business of the hold perverted religion has on India is so important to the understanding of every other phase of activity and life in this vast country that it deserves careful attention. No export manager sitting comfortably in an air-conditioned office back home can hope to understand the Indian market unless he knows something about the force which motivates every movement of their lives. Nor does it seem to me that the commercial exploitation of India can ever fulfill the great promise of its vast territory and population until something is done about the shackles of creed which now bind the benighted people.

Nominally the writer is not a special pleader for missionaries. The theory of foreign missions has always seemed to me to be an impertinence; and there are many evidences, especially in the South Seas and Australia, that the missionaries have vitiated their converts, and prepared them only for extinction. But in India, I'm in favor of missionary zeal; and it seems to me that business enterprises with "the long view" which hope to open up India markets might find contributions to the Christian mission a profitable investment.

* * *

All Is Not Sad

Let us hasten to clarify the issue: The people of commercial importance in India are not concerned in this examination of Hindu religion. They are Mohammedans, Parsees, Jews, or Christians.

It's the 240 millions of Hindus, the 12 millions of Buddhists, the eight millions of Animists, the four millions of Sikhs, and the two millions of Jains—the vast bulk of the population—who are in desperate need of rescue from themselves and from their priests.

Mohammedanism is very simple. Most people know that it has no ritual, no priesthood, no religion. All it asks of its adherents is prayer five times a day, belief in The One God, and a clean life (true believers abstain from alcoholic beverages). Its Koran incorporates the Old Testament of the Jews and the Christians; Christ is accepted as a minor prophet. They have two great feast celebrations (which, unfortunately, fall on the same dates as important Hindu festivals, causing occasional friction and fighting). Educated Mohammedans are fine people.

Concerning the Parsees, we learned little. They are an exclusive set, refusing not only to missionize or proselyte, but to admit even volunteers to their circle. At home, they pray constantly before a sacred fire which never dies. They wear a sacred garment. Their dead are not buried. Instead, they are carried up to a Tower of Silence where birds of prey pick their bones.

One thing they seem to have in common with the Jews: poverty is abjured, prosperity is holy. They take care of their own unfortunates, and, in addition, are most generously philanthropic toward the poor of all creeds.

Their 100,000 members, centered chiefly in Bombay, are a strong force, and respected, for progress.

* * *

Lesser Faiths

Now for some of the smaller groups of the reprehensibly religious (all of which are represented in Bombay.)

First, the Animists, descendants of the aboriginal inhabitants who were overrun by Aryan waves from the North, which began supposedly about 2,000 B.C.

To these primitive people—Dravidians, Todas, Santhals, Koles, Bhils, and Gonds—evil spirits lurk everywhere in Nature. They worship certain trees and rivers (can it be that the Hindus borrowed their reverence for the River Ganges from the Animists), and sometimes make human sacrifices to appease Nature's wrath.

These people have been susceptible to Christian teachings, and have been converted in large numbers.

Buddhism we have discussed in our article on Burma. Buddha was a noble mystic; but his teachings have long since been forgotten by his followers, who turned to priests and idols. In India, Buddhism was swallowed by Hinduism; it flourishes now only in Ceylon. In Tibet, and Burma, China and Indo-China, and in the tiny islet of Bali, it has attained ascendancy; but not in the country of its origin.

The Jains are Hindus, a special sect founded by a contemporary of Buddha, one Mahavera. We have told how the Jains are careful not to kill even insects or bacteria, and the absurd lengths to which this doctrine leads them, such as not cooking their food, or bathing.

Right there we bump head-on into the essential ugliness of the Hindu religion: *it teaches people the most utterly wrong methods of living.* Most religions have as their purpose the welfare of their people.

In ancient religious teachings of the Hebrews, Christians, and Mohammedans, which no longer have justification for existence, we can see simple hygiene, enforced by making it a religious command. But not so with Hindu teachings. They are perverted tenets, lead to the mortification of the flesh, are definitely anti-sanitary, and anti-progressive.

The Sikhs originally embraced a compound of Mohammedan and Hindu religions. They have their own god, Guru-Nanak, and their own religious scripture. In the Punjab they erected their own principality, and because of their warlike nature, kept intact until the coming of the British.

They wear long hair, and follow the Hebrew teaching not to "mar the corners of thy beard." Top hair is pinned up in a knot and fastened with a comb; long whiskers are sometimes carried around behind the ears to be tied at the back of the head. Each man wears a sword, as the emblem of independence, and a sort of diaper, as a reminder to be faithful to his wife (or wives).

On the *S.S. Ehma* between Rangoon and Calcutta I became acquainted with a number of Sikhs. One of them told me that Moses and Christ were accepted as prophets by his people. Of the legendary, Guru-Nanak, he told this story:

When the Mohammedans refused to accept the Sikhs, and reviled them, Guru-Nanak made a pilgrimage to Mecca. While everybody else prayed with heads toward Mecca, Guru-Nanak turned his *feet* toward Mecca, saying, 'God is within me, and within you, not in a city of stone.'

"The Moselems were angry and forcibly turned Guru-Nanak around in the opposite direction.

"But lo! When they looked, Mecca had moved, and Guru-Nanak's feet still pointed toward Mecca. They turned him again, and once more, the Mecca moved. They then set upon him with stones, and drove him away."

This little fable I have seen nowhere in print before, nor have any of the Indian scholars of my acquaintance heard it. It is submitted merely as an interesting document.

Whilst the better-educated Sikhs like Harbin Singh lead unimpeachable lives, the unlettered three millions have embraced more and more the reprehensible customs of the Hindus, clinging only to their long hair, beards, and daggers.

* * *

Why Religion?

Now, before we wade into the discussion of the Hindu religion and why we don't like it, perhaps we'd better justify the time we're spending on this subject. Certainly, the reader may feel, it has nothing to do with refrigeration and air conditioning, and the development of the Indian market for American goods.

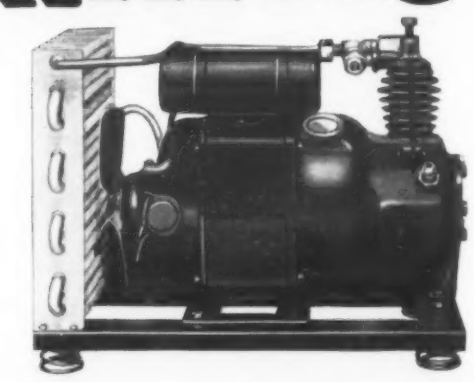
Moreover, isn't it dangerous ground? Aren't we likely to make some enemies? An old-time city editor from whom we received some of our first journalistic training, a man who guided the news columns of the respected *Portland Oregonian* for more than 30 years, once told us that the three R's of Newspaperdom were Race, Religion, and Rumor. These

(*Continued on Page 23, Column 1*)

Everyday Scenes in Bombay

Although the religious beliefs of many Hindus do not allow them to kill animals, they are not very humane towards them, George Taubeneck reports, and he labels as a "rare sight" the picture on the left in which a bullock team driver is allowing the beasts of burden to rest. (Center) Bombay street peddlers. (Right) Sidewalk barber at his task in Bombay.

KELLOGG



Dependable is the Word . . .

Whether your demand for household electric refrigeration condensing units is for original installation or for the replacement of units of other makes, it will pay you to investigate the new, light, compact, vibrationless Kellogg Highside.

After four years of experience with these units, we can safely assure you of more refrigeration for less current consumption than you have been taught to expect from a 1/6 H.P. unit.

It is small enough to fit into the compressor compartment of almost any domestic refrigerator box.

Kellogg can also supply commercial sizes from 1/4 to 5 H.P.

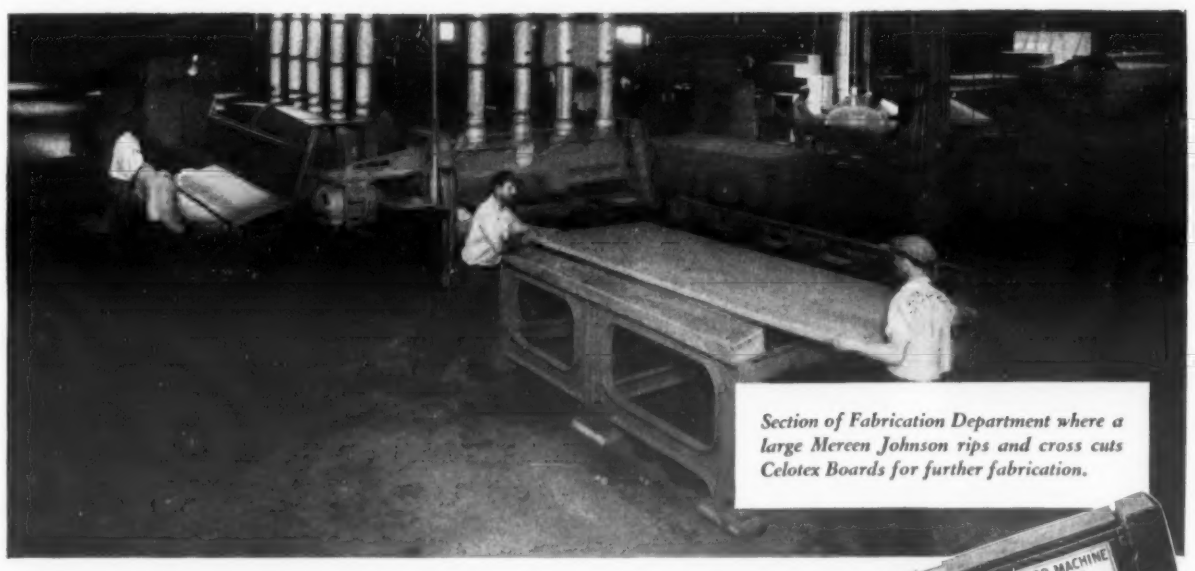
Write for your copy of the new Kellogg catalog and price list before you place your next order for highsides.

KELLOGG COMPRESSOR AND MANUFACTURING CORPORATION

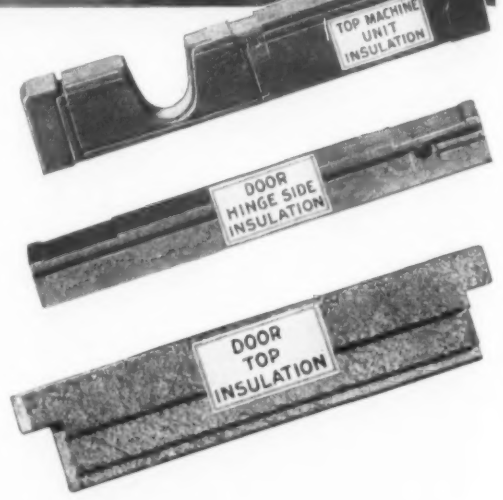
300 Humboldt St. ROCHESTER, NEW YORK U.S.A.

CELOTEX OFFERS A BETTER SOLUTION TO YOUR CABINET INSULATION PROBLEMS!

This light, strong insulation—factory fabricated to specifications—speeds assembly and insures lasting satisfaction!



Section of Fabrication Department where a large Mereen Johnson rips and cross cuts Celotex Boards for further fabrication.



AT the great Celotex Plant, a department is maintained solely to serve the refrigerating industry. It is specially equipped to furnish Celotex Insulating Board READY FABRICATED to fit ANY type, size or form of cabinet. It can supply you with Celotex of practically any desired thickness—cut to any size—and bevelled, drilled, grooved, slotted or punched to fit your individual requirements accurately. These ready fabricated Celotex Boards are furnished in moisture-resistant natural form or with special coverings for complete moisture-proofing.

Celotex Cane Fibre Insulating Board, the standard for refrigerator car insulation, also insures permanent, efficient insulation for refrigerator and cooling cabinets of all kinds. It is light, strong, sterilized, odorless. And Celotex not only insulates better but also deadens sound and reduces the communication of vibration. Consult with our specialists concerning your insulation problems. Their experience is extensive and practical. Use the coupon. No obligation.

CELOTEX
BRAND
INSULATING CANE BOARD
REG. U. S. PAT. OFF.

All Celotex Cane Fibre Insulating Products are manufactured under the Ferox Process (patented) and effectively resist damage by Fungus Growths, Dry Rot and Termites (white ants). Look for the brand name. Accept no substitutes.

THE CELOTEX CORPORATION ERN-7-29-36
919 N. Michigan Ave., Chicago, Ill.
Please send me complete information concerning Celotex Insulating Board for Refrigerating Cabinet Insulation.

Firm Name .....

Address .....

City ..... *State* .....

Trane

The Trane Co., La Crosse, Wis.

Functions—Remote floor type and remote floor or suspended type: heating, cooling, humidifying, dehumidifying, and cleaning. Suspended type: 2DE models, cooling and dehumidifying; 4DE models, cooling, dehumidifying, and cleaning; all others, heating, cooling, humidifying, dehumidifying, and cleaning. Climate Changer and Airite may have any or all of the functions.

Cabinets—Remote floor type, Trane insulated steel cabinet, brown crinkle baked-enamel finish, except 8102DE, aluminum finish. Remote floor or suspended type: Trane insulated steel cabinet with aluminum finish. Suspended type: 2DE and 4DE models, Trane insulated steel cabinet, with brown crinkle baked-enamel finish. All others, Trane insulated steel cabinet with aluminum finish. Climate Changer, 12 and 14 gauge steel, insulated, gun metal finish. Airite, completely encased furniture steel, insulated.

Blower—Remote floor type and remote floor or suspended type: Trane FC blower. Standard Mfg. Co. motor, direct drive. Suspended type: 2DE models, Trane propeller fan. Standard Mfg. Co. motor, direct drive. All other suspended units, Trane FC blower, Standard Mfg. Co. motor, direct drive. Climate Changer and Airite: Trane DWDI forward curved multiblade blower. Split phase motor on model O, all others, capacitor. Motor pulley has adjustable pitch diameter.

Air Circulation—Remote floor type: air intake in front, except model 8102DE, in rear. Discharge in top, except 8102DE, in front. Fresh air intake provided. Trane Free Flo grille. Remote floor or suspended type: intake in rear, discharge in front. Fresh air intake provided. Trane Free Flo grille. Suspended type: 2DE models, intake in rear, discharge in front. No fresh air intake. Trane Free Flo grille. 4DE models, intake in side or rear, discharge in front. Fresh air intake provided on order. Trane Free Flo grille. All other suspended units: intake in rear, discharge in front. Fresh air intake provided. Trane Free Flo grille. Climate Changer: air intake in front, discharge in rear. Airite: intake and discharge, top.

Cooling System—Direct expansion or circulating cold water. Trane copper coils.

Heating System—Trane copper coils, can be used with hot water. Heating capacities: model 52-4DE, 31,000 B.t.u.; 62-4DE, 44,400; 92-6DE, 85,000; 102-6DE, 125,000; 112-6DE, 154,000; 122-6DE, 200,000; 810-2DE, 137,000; 810-4DE, 275,000; 810-6DE, 440,000; 810-8DE, 520,000; 81-10DE, 710,000; 81-12DE, 790,000; 42-00DE, 29,000; 62-0DE, 57,500; 82-1DE, 83,000; 82-1A-DE, 88,000; 82-2DE, 115,000; 82-2A-DE, 138,000; 82-3DE, 165,000; and 82-3A-DE, 175,000.

Climate Changer—Trane non-ferrous coils to be used with steam or hot water. Heating capacities—basis 65° F. entering air, 2 lbs. per sq. inch steam pressure or 180° F. water: model 0, steam, 33,000 or 48,000, hot water, 33,000; 1, 61,000; 1A, 69,000; 2, 99,500; 2A, 114,000; 3, 122,000; 3A, 138,000; 4, 180,000; 5, 203,000; 5A, 243,000; 6, 288,000; 6A, 360,000. Airite: direct-fired oil burner. Capacities: model 150, 150,000 B.t.u.; 200, 200,000.

Type of Humidifier—Spray in all but Airite which is Cascade.

Air Cleaning Medium—Trane copper wool except Climate Changer and Airite, optional.

Remote Floor Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
52-4DE	$.....	96	48	....	....	13,200	...	...	....	....	15,900	5.8	....	...	200	260	30 x 52¼ x 9¼	1/30	975	(2) 4½	300	...	...
62-4DE	.....	180	90	....	....	21,000	...	...	....	....	26,800	9.1	....	...	335	395	32 x 58¼ x 11½	1/20	700	(2) 6	500	...	...
92-6DE	.....	480	160	....	....	48,500	...	...	....	....	57,400	14.5	....	...	530	590	38 x 70¼ x 14⅝	1/8	500	(2) 8	1,000	...	...
102-6DE	.....	625	208	....	....	71,000	...	...	....	....	92,500	18.7	....	...	660	720	38 x 82¼ x 14⅝	1/6	750	(2) 8	1,500	...	...
112-6DE	.....	810	270	....	....	85,500	...	...	....	....	108,000	21.0	....	...	740	800	46 x 90¼ x 18⅛	1/4	515	(2) 10	2,000	...	...
122-6DE	.....	960	320	....	....	112,000	...	...	....	....	129,000	24.0	....	...	1,040	1,100	46 x 100¼ x 18⅛	1/3	645	(2) 10	2,500	...	...
810-2DE	.....	768	192	....	....	86,000	...	...	....	....	86,000	21.0	....	...	1,300	1,450	62¾ x 70 x 20⅝	1/2	1,084	(2) 8	2,000	...	...
8104-DE	$.....	1,368	342	...	...	172,000	...	...	....	....	172,000	30.5	....	...	1,700	1,900	67¾ x 80 x 24⅝	3/4	646	(2) 12	4,000	...	...
8106-DE	.....	2,500	625	...	...	276,000	...	...	....	....	276,000	35.5	....	...	2,450	2,700	75 x 98 x 30⅝	1	475	(2) 12	6,000	...	...
8108-DE	.....	2,500	625	...	...	325,000	...	...	....	....	325,000	40.0	....	...	2,800	3,100	75 x 98 x 30⅝	2	640	(2) 15	8,000	...	...
8110-DE	.....	3,840	960	...	...	440,000	...	...	....	....	440,000	45.0	....	...	3,750	4,100	93½ x 116 x 36⅝	2	466	(2) 18	10,000	...	...
8112-DE	.....	3,840	960	...	...	48,500	...	...	....	....	48,500	49.0	....	...	4,500	4,900	93½ x 116 x 36⅝	3	553	(2) 18	12,000	...	...

Suspended Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
8104-DE	$.....	1,368	342	...	...	172,000	...	...	....	....	172,000	30.5	....	...	1,700	1,900	26¼ x 94 x 53	3/4	646	(2) 12	4,000	...	...
8106-DE	.....	2,500	625	...	...	276,000	...	...	....	....	276,000	35.5	....	...	2,450	2,700	34¾ x 110 x 59	1	475	(2) 15	6,000	...	...
8108-DE	.....	2,500	625	...	...	325,000	...	...	....	....	325,000	40.0	....	...	2,800	3,100	34¾ x 110 x 59	2	640	(2) 15	8,000	...	...
8110-DE	.....	3,840	960	...	...	440,000	...	...	....	....	440,000	45.0	....	...	3,750	4,100	42¾ x 130 x 72	2	466	(2) 18	10,000	...	...
8112-DE	.....	3,840	960	...	...	48,500	...	...	....	....	48,500	49.0	....	...	4,500	4,900	42¾ x 130 x 72	3	553	(2) 18	12,000	...	...
12-2DE	$.....	48	0	....	....	11,200	...	....	....	....	13,100	8.2	.4	0	...	100	18 x 17¼ x 18½	1/30	850	12½	870	870	..
15-2DE	.....	75	0	....	....	15,800	...	....	....	....	17,800	9.3	.4	0	...	135	21 x 20¼ x 18½	1/10	850	15½	920	590	..
18-2DE	.....	108	0	....	....	24,300	...	....	....	....	27,230	11.7	.4	0	...	180	24 x 23¼ x 18½	1/10	850	18	1,720	760	..
24-2DE	.....	192	0	....	....	43,400	...	....	....	....	48,200	14.7	.4	0	...	260	30 x 29¼ x 21½	1/10	850	18	2,000	500	..
105-4DE	.....	144	0	....	....	13,200	...	....	....	....	15,900	5.8	....	0	200	230	16¼ x 24½ x 31	..	850	6	250	...	..
106-4DE	.....	144	0	....	....	16,900	...	....	....	....	21,500	7.5	....	0	205	235	16¼ x 24½ x 31	..	850	(2) 6	430	...	..
107-4DE	.....	192	0	....	....	21,000	...	....	....	....	26,700	8.3	....	0	240	270	16¼ x 30½ x 34	..	850	8	575	...	..
108-4DE	.....	192	0	....	....	31,600	...	....	....	....	40,000	15.8	....	0	245	275	16¼ x 30½ x 34	..	850	(2) 8	990	...	..
42-00DE	.....	77	38.5	....	....	13,400*	...	....	....	....	13,500	5.8	....	..	...	190	13⅞ x 27⅛ x 26⅛	1/15	925	(2) 6	370	...	..
62-0DE	.....	255	85	....	....	30,500	...	....	....	....	30,800	10.4	....	..	...	300	19½ x 35⅛ x 34⅛	⅛	815	(2) 8	750	...	..
82-1DE	.....	512	128	....	....	52,000	...	....	....	....	52,000	12	....	..	...	750	26¼ x 46¾ x 47	¼	737	(2) 10	1,125	...	..
82-1A-DE	.....	512	128	....	....	55,000	...	....	....	....	55,000	13	....	..	...	750	26¼ x 46¾ x 47	¼	802	(2) 10	1,250	...	..
82-2DE	.....	680	170	....	....	76,000	...	....	....	....	76,000	18	....	..	...	995	26¼ x 59 x 53	¼	605	(2) 12	1,500	...	..
82-2A-DE	.....	680	170	....	....	86,000	...	....	....	....	86,000	21	....	..	...	995	26¼ x 59 x 53	½	735	(2) 12	2,000	...	..
82-3DE	.....	1,024	256	....	....	107,000	...	....	....	....	107,000	24	....	..	...	1,250	26¼ x 77¼ x 47	½	737	(4) 10	2,250	...	..
82-3A-DE	.....	1,024	256	....	....	111,000	...	....	....	....	111,000	28.5	....	..	...	1,250	26¼ x 77¼ x 47	½	802	(4) 10	2,500	...	..

Suspended and Duct (Climate Changer)

Model No.	Price	SURFACES Cool* Sq. Ft.	SURFACES Heat† Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification* Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
0	$.....	74	39	....	....	16,000	Optional	..	....	....	16,000	8	.030	6.2	162 or 81		20½ x 36¾ x 42½	1/10	925-750	8	650	...	..
1	.....	98	104	....	....	20,900	Optional	..	....	....	20,900	8	.039	7.0	194 or 97		20½ x 42¾ x 43	¼	750-700	10	850	...	..
1-A	.....	147	104	....	....	25,000	Optional	..	....	....	25,000	10	.048	7.3	194 or 97		20½ x 42¾ x 43	¼	805-765	10	1,015	...	..
2	.....	184	195	....	....	32,300	Optional	..	....	....	32,300	13	.053	7.6	290 or 145		27 x 49⅞ x 51	⅓	580-530	12	1,310	...	..
2-A	.....	275	195	....	....	40,200	Optional	..	....	....	40,200	16	.087	8.0	290 or 145		27 x 49⅞ x 51	⅓	615-575	12	1,635	...	..
3	.....	196	208	....	....	41,750	Optional	..	....	....	41,750	12	.121	8.3	322 or 161		20½ x 67⅞ x 43	½	750-700	10	1,700	...	..
3-A	.....	294	208	....	....	49,800	Optional	..	....	....	49,800	15	.260	8.3	322 or 161		20½ x 67⅞ x 43	½	805-765	10	2,030	...	..
4	.....	367	390	....	....	54,000	Optional	..	....	....	54,000	14	.260	14.6	500 or 250		27 x 79⅞ x 51	½	555-515	12	2,200	...	..
5	.....	367	390	....	....	64,800	Optional	..	....	....	64,800	17	.303	15.3	500 or 250		27 x 81 x 51	¾	580-530	12	2,630	...	..
5-A	.....	552	390	....	....	84,700	Optional	..	....	....	84,700	22	.368	16.6	500 or 250		27 x 83 x 51	1	640-600	12	3,440	...	..
6	.....	588	618	....	....	85,200	Optional	..	....	....	85,200	22	.337	16.6	728 or 364		33¾ x 93⅛ x 56	¾	500-460	15	3,470	...	..
6-A	.....	882	618	....	....	117,800	Optional	..	....	....	117,800	30	.467	17.4	728 or 364		33¾ x 95⅛ x 56	1	555-525	15	4,780	...	..

Duct Type (Airite)

150	.....	...	...	....	....	65,000	Optional	..	....	....	48,300	6	.090	5.0	1,700		54¾ x 34 x 79	¼	600	12	1,970	...	..
200	.....	...	...	....	....	82,000	Optional	..	....	....	62,300	8	.120	6.0	2,000		54¾ x 42 x 79	⅓	456	15	2,625	...	..

*Areas given are for direct expansion of refrigerants. Coils for circulation of cold water are larger. †Areas given are for steam heating. Coils for hot water have a surface twice as large.

Westinghouse

Westinghouse Electric & Mfg. Co.
Springfield, Mass.

Functions — Self-contained type: cooling, dehumidifying, and cleaning. Remote floor type: models EL-10, EL-14, EH-10, and EH-14, cooling, dehumidifying, and cleaning; EL-12, EL-15, EH-12, and EH-15, heating, cooling, humidifying, dehumidifying, and cleaning. Suspended type: cooling and dehumidifying.

Cabinet—Self-contained type: Westinghouse walnut finished steel cabinet, inner cabinet insulated. Remote floor type: Westinghouse steel cabinet, not insulated, walnut or mahogany finish. Suspended type: Westinghouse steel cabinet, partly insulated, walnut, mahogany, or gray finish.

Compressor — Self-contained type: Westinghouse compressor, water cooled. Westinghouse capacitor motor. Westinghouse reduced voltage motor starter. Internal high pressure relief valve. Manual control (thermostat as an accessory).

Blower — Westinghouse propeller blower. Westinghouse capacitor motor, direct drive.

Air Circulation—Self-contained and remote floor types: air intake in ends, discharge in top. Fresh air intake provided as accessory. Westinghouse bar-type discharge grilles. Suspended type: air intake in top, bottom, and sides, discharge in top. No fresh air intake. Westinghouse discharge grilles.

Cooling System — Self-contained type: direct expansion, Westinghouse copper cooling coils. Remote floor type: models EL-10, EL-12, EH-10, and EH-12, direct expansion; models EL-14, EL-15, EH-14, and EH-15, circulating cold water. Suspended type: models ES-05 and ES-10, direct expansion: ES-054 and ES-14, circulating cold water. Young copper cooling coils.

Heating System—Bush copper heating coils, can be used with hot water. Heating capacities: models EL-12, EL-15, EH-12, and EH-15, 23,350 B.t.u.

Type of Humidifier—Impact.

Air Cleaning Medium — Westinghouse copper mesh filter. Model SW-06, Owens, Illinois, American or Arco filter.

Controls—Self-contained type: float valve and water-regulating valve. Remote floor type: thermostatic expansion valve on EL-10, EL-12, EH-10, and EH-12. Suspended type: thermostatic expansion valve on ES-05 and ES-10.

Special Features—Model SW-06 has hermetically sealed unit.

Self-Contained

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	COMPRESSOR Bore & Stroke	Speed R.p.m.	Motor Hp.	Input Watts	Heat Capac. B.t.u.	Humidification* Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
SW-06	$380.00	60.8	0	2,300	4,700	7,000	F-12	2¼	...	...	....	½ 890	0	0	315	375	28 7/16 x 36¾ x 15¾	1/75	910	10¼	225	450	30

Remote Floor Type

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Sensible Heat	Total B.t.u.	Refrigerant Kind	Charge Lbs.	Refrig. Capacity—WATER Dehumidification	Sensible Heat	Total B.t.u.	Water Circu. G.p.m.	Pressure Drop Lb/sq. in.	Humidification* Lbs./hr.	WEIGHT Net Lbs.	Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	Speed R.p.m.	Diam. In.	Total C.f.m.	Veloc. F.p.m.	Input Watts
EL-10	$150.00	130	0	2,820	8,805	11,625	F-12	...	....	....	....	....	....	0	180	305	26⅝ x 38 11/16 x 13 7/16	1/150	800	(2) 10¼	400	400	50
EL-12†	180.00	130	35.4	2,820	8,805	11,625	F-12	...	....	....	....	....	....	30	200	325	26⅝ x 38 11/16 x 13 7/16	1/150	800	(2) 10¼	400	400	50
EL-14	150.00	130	0	...	...	...	Water	...	3,360	9,670	13,030	2.4	2.5	0	170	295	26⅝ x 38 11/16 x 13 7/16	1/150	800	(2) 10¼	425	425	50
EL-15	180.00	130	35.4	...	...	...	Water	...	3,360	9,670	13,030	2.4	2.5	30	210	335	26⅝ x 38 11/16 x 13 7/16	1/150	800	(2) 10¼	425	425	50
EH-10	150.00	130	0	2,820	8,805	11,625	F-12	...	....	....	....	....	....	0	215	350	39¾ x 38 11/16 x 13 7/16	1/150	800	(2) 10¼	400	400	50
EH-12†	180.00	130	35.4	2,820	8,805	11,625	F-12	...	....	....	....	....	....	30	255	390	39¾ x 38 11/16 x 13 7/16	1/150	800	(2) 10¼	400	400	50
EH-14	.....	130	0	...	...	...	Water	...	3,360	9,670	13,030	2.4	2.5	0	205	340	39¾ x 38 11/16 x 13 7/16	1/150	800	(2) 10¼	425	425	50
EH-15	.....	130	35.4	...	...	...	Water	...	3,360	9,670	13,030	2.4	2.5	30	245	380	39¾ x 38 11/16 x 13 7/16	1/150	800	(2) 10¼	425	425	50

†Can be supplied for winter air conditioning only. These units are known as EL-11 and EH-12 depending upon style of cabinet. The heating, humidification, and all other details are identical with the type EL and EH-12 units.

Suspended Type

ES-05	$ 95.00	64	0	1,400	4,325	5,725	Freon	...	....	....	....	....	....	0	90	165	16¼ x 18⅜ x 13¾	1/150	725	10¼	225	350	25
ES-054	95.00	64	0	....	....	....	Water	...	1,680	4,835	6,515	1.2	1.25	0	85	160	16¼ x 18⅜ x 13¾	1/150	725	10¼	225	350	25
ES-10	125.00	112	0	2,800	8,650	11,450	Freon	...	....	....	....	....	....	0	130	220	21⅜ x 23¾ x 14	1/75	860	12	485	350	30
ES-14	125.00	112	0	....	....	....	Water	...	3,360	9,670	13,030	2.4	2.5	0	120	210	21⅜ x 23¾ x 14	1/75	860	12	485	350	30

*50° water used.

Around the World

With George F. Taubeneck

(*Continued from Page 21, Column 5*)

three R's were not to be studied; they were to be *avoided*, as being, almost invariably, trouble makers.

This discussion probably falls into the province of all three categories: it's about a specific religion of a specific race; and while some of the knowledge on which it's based came from observation, most of it was gained at second-hand from men who have lived with, and had to contend with, the situation.

Aside from the fact that it's darned interesting to anyone that's interested in the Other Half, what has it got to do with American business men? Let us repeat: The Indian market is going to be a disappointing market until the Hindu religion has been modernized, rationalized, dissipated, or superseded. Development of the market will, or should, proceed in direct ratio with modifications of the religion which permeates every fiber of the complexly patterned fabric of life in India.

The fundamental fact to be grasped about the Hindu religion is that each individual feels that *nothing can be done about his station in life.* From the standpoint of the whole, the religion is *dedicated to the preservation of the status quo.*

It all revolves around the doctrine of "Karma," which is a combination of Fate and Reincarnation. Every Indian child who survives the rigors of birth (somebody please remind me to talk about maternity conditions later) is born into a certain station in life. That's the caste system. There's nothing he can do to change that station, he is taught to believe, for Fate decreed his caste as a result of his record in a previous life. All he can hope for is a better deal in his next reincarnation, a fate which he can earn by strict adherence to certain rules.

Take, for example, the pitiable case of the child brides whose intended husbands die before the carriage can be consummated. Most of us have heard the tales of the sad existence (they cannot marry again; must live as degraded slaves at the service of their mothers-in-law) to which they are condemned as long as they live. They Suffer in silence, for they believe that this woe has been visited upon them because they were unfaithful to a husband in a previous existence.

An Untouchable who spends his life hauling refuse on his back believes that he must spend his life at this onerous task because in a former existence he was a thief, or an adulter. Those who are born with, or develop, grievous affliction, are taught that the last body which their soul inhabited murdered a Brahmin.

No doubt this pervading belief in Karma, in the necessity of spending a miserable life in the expiation of the sins of a previous incarnation, developed as a solace and a refuge for a people which has suffered invasions and foreign rule for centuries upon centuries of foreign rulers. With each conquest and humiliation, with each fresh pillage and ravage, the Indian retreated further back into his religion. Thus he became weaker and less resistant, and the vicious circle spiraled ever downward.

* * *

The Caste System

As centuries passed and the plight of the Indian became worse, the Brahmin priests steadily added to their power and prerequisites, and gradually stratified society into rigid classifications.

Roughly speaking, there are four castes among the Hindus: (1) Priests; (2) soldiers; (3) farmers and tradesmen; (4) laborers. The priests are called Brahmins; the soldiers, Khatris; the farmers, Vayshas; the tradesmen, Shudras. Each caste is also subdivisable. For example: among the Shudras, the goldsmiths rate higher than weavers, and the weavers higher than tanners. Each caste is strictly hereditary.

The Brahmins, while nominally priests, are likely to be anything which they consider compatible with their dignity. Government positions appeal to them. So does any kind of white-collar work. Being a merchant or an engineer is not for them; such pursuits would mean loss of caste. Hence, the Brahmins are unavailable for commercial or industrial leadership or development.

As for the tradesmen, why should they aspire to riches or success if the two upper classes, the Brahmins and the Khatris, can spit upon them and shove them out of their paths? Their lot is simply to eke out an existence and keep out of the way, lest they incur the wrath of the Brahmins, and fall even lower in the social caste in their next reincarnation?

I ask you, how can you get anywhere with American ideals of progress in dealing with people who have such rigid defeatists' ideas as those?

As for the Untouchables, their case is too well known to need additional treatment here. Let us simply stick to our subject, Trade, and see how the Untouchables fare.

If an Untouchable wishes to buy something, he stops at his stipulated distance (Untouchables are graded according to the distance at which their presence will pollute a man of higher caste; just as Tommy Hitchcock has a 10-goal handicap in polo, so some Untouchables are 10-yard men, some have 50-yard handicaps, others must keep 200 yards away from their betters). Then he shouts to the merchant what he wants, leaves the money in a basket, and retreats his distance from the basket. The merchant goes to the basket, picks up the money (which is exempted from the rule that anything touched by an Untouchable is defiled—the sole other exemption being the bodies of Untouchable girls—practical peoples, these Brahmins), leaves his goods, and hastily gets back to his shop.

That, we proclaim, is the utter antithesis of specialty selling.

The agriculturalists make our benighted share-croppers seem like landed gentry by comparison. How I wish the heat had spared my pictures of those hapless farmers, scratching the dusty soil with centuries-old implements, eating rice-and-curry from a single wooden bowl, fertilizing the land from their own bodies, trudging long distances under a blazing sun with a jug of foul water.

Almost every farmer *inherits* debts to the money-lenders. These debts pile up as his contributions to the Brahmins continue at stated intervals, which demand special ceremonies of his life—such as birth, christening, weaning, betrothal, marriage, illness, and death. Everything they earn, outside of a few rags and a starvation diet of rice, goes to the priests, and money-lenders, and princes. How can you sell anything to people like these?

Moreover, the priests, money-lenders, and princes traditionally convert their Shylocked gains into precious gems and metals, which they are likely to bury! Hence all this wealth remains non-productive, and very little of it gets into circulation.

India is a country of vast physical and human resources, but the deeply-rooted system makes it baffling to those who would bring Western progress and comforts to its wretched people. Just as I found that the Antipodes were suffering from too much government, so India is the frightful victim of Too Much Religion.

* * *

Too Complicated

As to the details of Hindu worship, they are too complicated, or too revolting, to be recounted here. Under the tutelage of the librarian of the University of Ceylon, whom I met aboard the P & O steamship *Malaja*, the writer made a conscientious attempt to study the Hindu religion, as well as Indian history. But it was too complex to be unraveled in the time at our disposal.

Indian history is a recital of three thousand years of successive invasions of more vigorous people, bringing their own gods and their own customs. The development of the Hindu religion is a story of the assimilation of the worst features of the various imposed religions, and their welding into a system which is designed to keep the top dogs on top, the bottom curs under heel.

Of sacred writings there are many. First are the 4,000-years-old Vedas, written in Sanskrit, which are animistic poetry. Next came the Upanishads, on which the famous Yogi, or Hindu mystics who so fascinate American women's clubs, base their thinking. Next came the Ramayana, the Mahabharata, and the Puranas—epic histories in the Homeric vein, plus ecclesiastical speculations. By these books Hindu scholars attempt to prove that their ancient wise men anticipated all our scientific discoveries—from the Zeppelin to Einstein's Theory of Relativity—thousands of years ago. (The point is, that even if they did make such "discoveries," they didn't *do* anything with, or about them.)

Their gods are a holy trinity—Brahma, Shiva, and Vishnu. Each has appeared and reappeared in numerous reincarnations who are also worshipped. (The strength of Gandhi among the masses of India lies largely in the belief that he is the reincarnation of Vishnu.)

Vishnu, and his most notable reincarnation, Krishna, thought through some noble concepts. But, as in the case of Buddha (and, dare we say, Christ?) these have long since been forgotten or ignored. What the Hindu remembers about Vishnu and Shiva are the records of their phenomenal sexual exploits.

Right at this point Sex Rears Its Ugly Head, and we don't know just what to do about it. It's the most macabrely fascinating part of the picture, but it certainly can't be printed here. If you'll come to us privately some day, maybe we'll tell you some of the things we saw and heard.

A French postcard simply isn't in the same class with the friezes, sculptured figures, and murals of a Hindu temple. Nor could the combined talents of Freud, Krafft-Ebbing, Dr. Marie Stopes, Elinor Glyn, and Mae West turn out anything to compete with some of the passages in the Mahabharata and the Puranas.

Suffice it to say that sex is worshipped by the Hindus, that their children are trained from infancy in the belief that the procreative act is the nearest earthly approach to the gods, that the life of women is so restricted that her only functions—apart from menial labor—are sexual, that all literature (even the nursery rhymes!) revolves around sex, that the prostitute has a much happier time of life than a wife and certainly more freedom, that baby girls are dedicated to priests (who operate brothels for profit as annexes to the temples), and that religious festivals are often orgies.

The practice of early marriage and the religious emphasis upon sex may have grown out of the fact that this was the only pleasure left to the much - conquered, poverty - stricken Hindus. Its results, like the acquiesences in "Karma," have been to push the race further down the scale of weakness and degeneracy.

Gateway to India

(Left) Bombay street scene. Note the almost total absence of motor vehicles, with people walking in the streets, and the variety of male attire. (Right) George got up early (or stayed up late!) to get this picture of Bombay harbor at sunrise. Gateway to India arch is at the left.

Sufficient commentary on this point may be found in newspapers published in India, which are replete with advertisements of patent medicines designed to "restore lost manhood" and the like. The wording of some of these advertisements is truly amazing.

One of the chief jobs of the salesmen of American products, such as automobiles and radios, is that of demonstrating that there are other pleasures in life besides sex. And if he succeeds, it may be the finest thing that has ever happened to the Human Race. In time, it might gain enough strength to throw off the chains of bondage which have been forged and reforged at regular intervals for thousands of years.

* * *

No Rope Trick

While riding around Bombay with a Mohammedan merchant, the tomb of a Hindu saint was pointed out. There are many such shrines around Bombay.

"How does one become a saint?" I asked.

"By wearing dirty clothes and begging," replied the merchant with ironic realism.

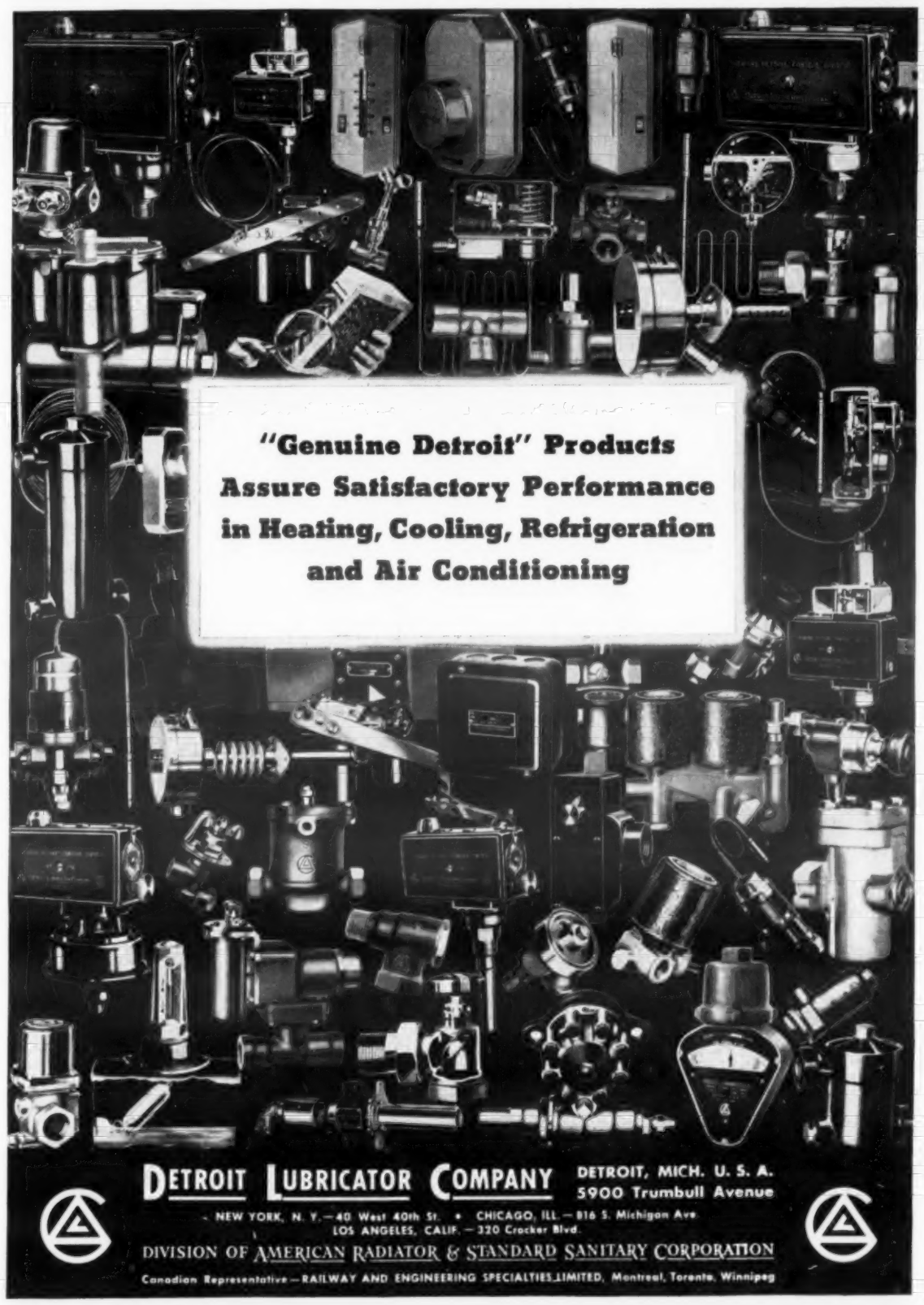
Concerning the *sadhus* of India, these "holy men" who renounce all earthly pleasures (except sex) and possessions, who devote their lives to contemplation and self-inflicted suffering, much has been written and imagined.

Some of it is pure bunk and hokum. Some of it is real. These ascetics become experts in submission to pain and self-torture. They walk through fire, sleep on nails, stab themselves, carry one arm upstretched until it withers and will not come down, smear themselves with filth, drink poisons which would kill a normal man, hold their breath or abstain from food for extraordinary periods, stop and start the heart and pulse at will—these and many other well-nigh incredible feats, some of which you may have seen demonstrated in the newsreels or in cinematic travelogs.

Again, the point is that the highest aim of these "saints," the paragons of the Hindu religion, is to work spectacular *harm* to their bodies. If ever a religion was perverted, this seems to be it.

As to their more "useful" occult powers, like disappearing in Bombay at 4:05 p.m. and showing up in Benares at 4:06 p.m., one hears many strange tales, but sees no evidence. The famous "rope trick," for instance, has no apparent foundation in fact. For years a Bombay man has had a

(*Concluded on Page 25, Column 1*)


"Genuine Detroit" Products
Assure Satisfactory Performance
in Heating, Cooling, Refrigeration
and Air Conditioning
DETROIT LUBRICATOR COMPANY
DETROIT, MICH. U. S. A.
5900 Trumbull Avenue
NEW YORK, N. Y.—40 West 40th St. • CHICAGO, ILL.—816 S. Michigan Ave.
LOS ANGELES, CALIF.—320 Crocker Blvd.
DIVISION OF AMERICAN RADIATOR & STANDARD SANITARY CORPORATION
Canadian Representative—RAILWAY AND ENGINEERING SPECIALTIES LIMITED, Montreal, Toronto, Winnipeg

Williams

Williams Oil-O-Matic Heating Corp.
Bloomington, Ill.

Functions—Cooling, dehumidifying, heating, humidifying, and cleaning. (Oil-O-Matic burners ranging in capacity from 1½ to 25 gallons of oil per hour are offered to meet the heating requirements for an Air-O-Matic installation.)

Cabinet—Metal housing for air distribution unit. Insulated for heat and sound.

Air Circulation—For installations up to 9 tons, the factory furnishes an air distribution unit complete with air filter, cooling coil, heating coils, fan assembly, and humidifier. Air inlet and discharge at the top.

Blower—Single inlet type, with the drive and motor outside the air current, but within the housing.

Cooling System—All models employ an absorption unit consisting of a condenser, an absorber, solution pump, heater, and heat exchanger. Both heating and cooling coils are tin-dipped, copper-finned. Heat input to burner in B.t.u. per hour—model 6, 120,000; model 9, 180,000; model 13, 360,000; model 20, 400,000.

Type of Humidifier—Either the spray or pan type. Tap water supply to either type is automatically controlled.

Refrigerant—Zeon.

Air Cleaning Medium—Conventional type filter.

Controls—Selector switch with five positions: (1) off; (2) heating; (3) ventilation; (4) refrigeration; (5) off. Cooling thermostat, dual heating thermostat, damper controller, humidistat, and necessary relays.

Willard

Willard Metallic Crypt Co.
Willard, Ohio.

Functions — Self-contained type: cooling, humidifying, dehumidifying, cleaning. Duct type: heating, cooling, humidifying, dehumidifying, cleaning.

Cabinet—Steel with lacquer finish. All models insulated. Both No. 4 models and 10 are insulated with 1½ inch Temlok.

Pump—Westco pump, Century pump motor.

Blower—Peerless double centrifugal type fan with 3-speed motor.

Air Circulation—Self-contained portable type: air intake through louvres in icing door; built-in type air intake in top. Discharge in top. Duct type: air intake and discharge in ends.

Cooling System—Duct types: Trane cooling coils.

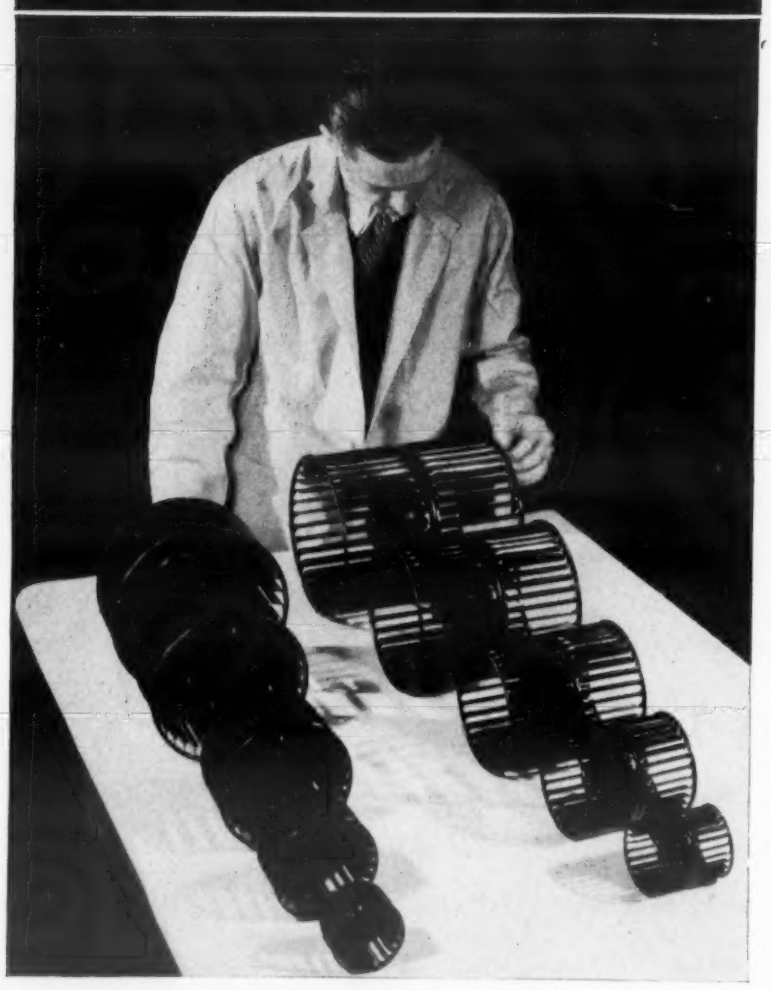
Air Cleaning Medium—Air washer through double bank spray assembly in all models.

Controls—Self-contained models: 3-way cock can be set for operation of sprays or for pumping out. Duct type: thermostatic control element maintains set temperatures in sprays.

Model No.	Price	SURFACES Cool Sq. Ft.	SURFACES Heat Sq. Ft.	Refrig. Capacity—DIRECT Dehumidification	Refrig. Capacity—DIRECT Sensible Heat	Refrig. Capacity—DIRECT Total B.t.u.	Cooling Medium Kind	Cooling Medium Lbs.	Refrig. Capacity Dehumidification	Refrig. Capacity Sensible Heat	PUMP Motor Hp.	PUMP Speed R.p.m.	PUMP Water Circu. G.p.m.	Humidification Lbs./hr.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	Overall Dimensions H. x W. x D.	BLOWER Motor Hp.	BLOWER Speed R.p.m.	BLOWER Diam. In.	BLOWER Total C.f.m.	BLOWER Veloc. F.p.m.	BLOWER Input Watts
4*	$399.50	....	....	....	....	43,000	Ice	..	....	....	¼	..	8¼	..	800	800	51 x 48 x 27	¼	...	..	580-1,350	...	..
Duct Type																							
4†	375.00	....	....	....	....	42,000	Ice	..	....	....	¼	..	8¼	..	750	800	48 x 48 x 27	¼	...	..	580-1,350	...	..
5	750.00	....	....	....	....	60,000	Ice	..	....	....	½	..	15	..	2,750	2,850	72 x 60 x 75	½	...	..	1,700‡	...	..
6	770.00	....	....	....	....	72,000	Ice	..	....	....	½	..	18	..	2,800	2,900	72 x 60 x 75	½	...	..	2,100‡	...	..
7	775.00	....	....	....	....	84,000	Ice	..	....	....	¾	..	21	..	2,800	2,900	72 x 60 x 75	½	...	..	2,500‡	...	..
8	780.00	....	....	....	....	96,000	Ice	..	....	....	¾	..	24	..	2,800	2,900	72 x 60 x 75	½	...	..	2,800‡	...	..
9	785.00	....	....	....	....	108,000	Ice	..	....	....	¾	..	27	..	2,800	2,900	72 x 60 x 75	½	...	..	3,200‡	...	..
10	785.00	....	....	....	....	120,000	Ice	..	....	....	¾	..	30	..	2,800	2,900	72 x 60 x 75	½	...	..	3,500‡	...	..

*Portable, with casters. †Built-in type.

PRESSED STEEL WHEELS
For Oil Burners, Driers and Air Conditioning Units



Immediate Delivery at Production Prices!

● A wide variety of combinations and types of multi-blade wheels — ranging from three inches to nine inches in diameter, with standard and reverse hubs, for clockwise or counter clockwise operation, in single and double widths — are carried in stock for immediate delivery.

Over fifty years' experience, quantity production methods and the finest equipment for the manufacture of multi-blade wheels for air handling enables us to produce these precision made wheels at unusually attractive prices.

You are invited to correspond with us regarding capacities, sizes, prices, etc. of wheels for oil burners, air conditioning units, driers, etc. There is no obligation. Address your inquiry to — Appliance Accessory Department.

AMERICAN BLOWER CORPORATION
Division of American Radiator & Standard Sanitary Corporation
6000 Russell Street Detroit, Michigan

American Blower
"Sirocco" VENTILATING, HEATING, AIR CONDITIONING, DRYING, MECHANICAL DRAFT
DIVISION OF AMERICAN RADIATOR and STANDARD SANITARY CORP.

Please send data on wheels for _____
Name _____
Address _____
City _____ State _____ (1298)

SPECIFICATIONS OF WINTER CONDITIONERS

Published on this and pages 26 and 28 are specifications of winter air conditioners and humidifiers.

While some of the equipment covered in these specifications may be converted into year-'round conditioners, the specifications given are for winter functions only.

Many of the units covered in the specifications of year-'round equipment on preceding pages can, of course, be converted into winter conditioners only where desired.

Method of ratings used are the same as those given on page 4 for the winter functions of the year-'round systems.

Air-Pak

Air Controls, Inc.
Cleveland, Ohio.

"Air-Pak," made by Air Controls, Inc., is a winter air-conditioning system comprising a blower and filter system designed for use with a warm-air heating system.

The unit is available in various models which circulate air in the range of 670 to 5,000 c.f.m., with blower motors ranging from ⅛ hp. to 1 hp. in size. Watt input for these units ranges from 110 for the smallest to 1,000 for the largest.

Features of the system are patented louvers which close when the blower is running and open as soon as it shuts off, permitting the furnace to operate as a gravity system. This also prevents the furnace from overheating.

The steel casing for the unit is dieformed in panels with top, canvas connector, and large door. Finish is enamel.

Blower motor is Century made and rubber mounted. Single-phase motors under ⅓ hp. are split-phase; ⅓ hp. and above are capacitor or repulsion-induction. Gates V-belt drives are used.

For cleaning the unit employs Dustop spun glass filters.

American

American Air Furnace Co.
St. Louis, Mo.

American Air Furnace Co. of St. Louis is building a series of winter air-conditioning equipment that heats, humidifies, cleans, and circulates the air.

In the oil burner and coal burning types, the heating capacity range is from about 80,000 B.t.u. per hour to 220,000 B.t.u. per hour. In the gas heating units, the capacity range is from 50,000 to 198,000 B.t.u. per hour.

For the oil burner and coal burning types, the blower capacity range is from 1,200 to 3,600 c.f.m., and for the gas heating units it is from 1,400 to 2,800 c.f.m.

Cabinets are of metal, all enclosed, and finished in wrinkle enamel. A side-louvered panel gives access to the heating equipment and combustion chamber.

Blower is of the multiple rotor, centrifugal type, operating at relatively low speeds. Texsteel V-belt drive. Air is taken into the top at one end of the unit and leaves through the top at the other end.

Heating is by a direct-fired unit, the conditioned air being circulated around the combustion chamber.

Humidification is accomplished in the oil burner unit through an automatic device that operates from the water supply line. The temperature inside the cabinet regulates the evaporation and the air is moistened as it passes through the casing. In other units spray-nozzle type humidifiers are provided.

Viscous type air filters are furnished for cleaning.

In the oil burner a thermostat controls the operation of the burner. A thermostatic switch on all units controls the operation of the blower. Where positive humidification is offered, a humidistat is provided.

Burnham

Burnham Boiler Corp.
Irvington, N. Y.

Functions — Heating, humidifying, and cleaning.

Cabinet—Steel cabinet with walnut finish, dull black top, stainless steel trim.

Blower — Westinghouse propeller blower, direct driven by Westinghouse shaded-pole motor.

Air Circulation—Air intake under bottom of unit, air discharge in top of unit. Trane grilles are used.

Air Cleaning Medium—Owens-Illinois filter.

Heating System—Steam or hot water. Modine copper heating coils used.

Type of Humidifier—Evaporating. Water used for humidification heated to approximately 90° F. by heating coil.

Controls Furnished—Thermostat.

Model No.	PRICE F.O.B. Factory	Overall Dimensions H. x W. x D.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	HEATING Surface Sq. Ft.	HEATING Capacity B.t.u./hr.	Humidification Lbs./hr.	BLOWER Motor Hp.	BLOWER Speed R.p.m.	BLOWER Diam. In.	BLOWER Total C.f.m.	BLOWER Veloc. F.p.m.	BLOWER Input Watts
O, R or U*	$.....	23¾ x 39¼ x 13¾	150	170	80	19,200	1½ - 4	1/100	900	10¼	375	300	63†

*Model "O" is a cabinet model for replacement in old house construction. Model "R" is for recessing in a wall in new house construction as in model "U" except that recess panel is not furnished. Working part of the unit is individual in all cases. †At top speed. 27 watts at low speed.

Corozone

Corozone Air Conditioning Corp.
Cleveland, Ohio.

Functions — Models "HC" and "HCSWC": humidifying and cleaning; model "EHC": heating and cleaning.

Cabinet—Corozone wood cabinet with walnut finish.

Blower—Corozone blower driven by Westinghouse motor.

Air Circulation—Air intake at the bottom on the right side, air discharge at the top.

Heating System—Electric.

Type of Humidifier—Vapor.

Air Cleaning Medium—Owens-Illinois filter.

Controls Furnished—Thermostat.

Special Features—Ionizer.

Model No.	PRICE F.O.B. Factory	Overall Dimensions H. x W. x D.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	HEATING Surface Sq. Ft.	HEATING Capacity B.t.u./hr.	Humidification Lbs./hr.	BLOWER Motor Hp.	BLOWER Speed R.p.m.	BLOWER Diam. In.	BLOWER Total C.f.m.	BLOWER Veloc. F.p.m.	BLOWER Input Watts
HC	$.....	35⅛ x 32½ x 17¾	102	135	....	3,412	1 qt.	1/60	1,140	12	600	600	67
EHC	.....	35⅛ x 32½ x 17¾	102	135	....	3,412	1 qt.	1/60	1,140	12	600	600	67
HC & SWC	.....	15½ x 19½ x 15½	133	193	....	3,412	1 qt.	1/60	1,140	12	600	600	67

Electrol

Electrol, Inc., Clifton, N. J.

Functions — Heating, humidifying, and cleaning.

Cabinet — Electrol steel cabinet, Duco finish. Cabinet is insulated.

Blower—Electrol multivane blower, driven by V-belt from Baldor capacitor motor.

Air Circulation—Air intake in top, air discharge in top.

Heating System—Direct fired.

Type of Humidifier—Spray.

Air Cleaning Medium—Arco filter.

Controls Furnished—"D" series: thermostat, humidistat, and solenoid valve. "SS" series: humidistat and solenoid valve.

Model No.	PRICE F.O.B. Factory	Overall Dimensions H. x W. x D.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	HEATING Surface Sq. Ft.	HEATING Capacity B.t.u./hr.	Humidification Lbs./hr.	BLOWER Motor Hp.	BLOWER Speed R.p.m.	BLOWER Diam. In.	BLOWER Total C.f.m.	BLOWER Veloc. F.p.m.	BLOWER Input Watts
DF-1	$.....	56½ x 33½ x 92	....	1,400	....	120,000*	..	¼	603	..	1,450	...	..
DF-2	.....	56½ x 33½ x 92	....	1,600	....	150,000	..	⅓	500	..	1,650	...	..
DF-3	.....	56½ x 33½ x 92	....	1,800	....	175,000	..	½	513	..	1,850	...	..
DF-4	.....	60½ x 35½ x 97	....	2,000	....	225,000	..	¾	428	..	2,450	...	..
SS-1	.....	48½ x 42¾ x 36½	....	600	....	87,500	..	¼	716	..	1,120	...	..
SS-2	.....	60½ x 56½ x 36½	....	900	....	162,000	..	⅓	558	..	2,000	...	..
SS-3	.....	60½ x 56½ x 51½	....	1,200	....	234,000	..	½	656	..	2,700	...	..
SS-4	.....	60½ x 56½ x 63⅝	....	1,500	....	307,000	..	¾	630	..	3,600	...	..

*Rated for 1 lb. steam supply with 60° F. entering air dry bulb.

Around the World

With George F. Taubeneck

(*Concluded from Page 23, Column 5*)

standing offer of several thousand dollars for any "sadhu" or "fakir" who will perform the trick, but there have been no takers.

The "sadhu" gets his powers by long practice in self-control, which begin with the Yogi breathing exercises, and progress into auto-hypnotic trances. They live by begging.

Only a small portion of the vast army of beggars, however, are the professional sadhus. Most of them are Untouchables who can find no means of self-support, unemployed tradesmen, or farmers who have been dispossessed by money-lenders.

Giving alms to beggars is a holy command to all but the Brahmins—which again reduces the already infinitesimal income of the poor Hindus. Even more holy are regular contributions to the temples, which are found on almost every corner.

Building a temple, by the way, is a most profitable enterprise for a Brahmin. He gets a "cut" of the "take" and it comes in regularly. Depressions are welcomed by temple owners, for then the populace redouble their contributions in hopes of appeasing the wrath of the Gods.

* * *

Education

Appalling examples could be cited concerning the ignorance of the Indian masses—their belief in the efficacy of curses, their belief in charms, their insistence upon unsanitary modes of living.

When British health authorities have attempted wholesale vaccinations, or the chlorination of wells, or other simple measures to combat the frightful toll of epidemics, they are met with wild and clamorous resistance—all in the name of religion.

One result is that many ports will not allow ship passengers who embarked at Bombay to land without certificates of recent vaccination and innoculation. Weekly death figures from the larger cities in times of the frequent epidemics are always quoted in three figures.

Medical practices among the lower classes are hideous combinations of savage "magic" and applied filth—again, they do all the *wrong* things as a matter of religious practice. Counter-irritation, an accepted medical practice of today when administered scientifically, assumes such forms in India as burning, beating, and submitting to snake bites.

Bombay's rats—the world's biggest and most numerous—have been mentioned before. But Bombay hasn't the only municipal claim to fame on this score. Read this clipping from *The Evening Times of India*, April 24, which we tore out while there:

AHMEDABAD, April 23—A heated discussion took place at a meeting of the Ahmedabad Municipality held last evening on the question of continuing the destruction of rats in the city.

Dr. Hariprasad, Chairman of the Sanitary Committee, moved for a provision of Rs 15,000 in the budget for the destruction of rats. He said that the destruction of rats had prevented the outbreak of plague. For the protection of citizens such acts of violence had to be done. Dr. Hariprasad cited the opinion of Mr. Gandhi in support of his contention.

Opposing the resolution, Mr. Manilal Chaturbhai said that it was no use spending Rs 15,000 when there was no danger of plague. He referred to the speeches of Mr. Gandhi at Borsad and said that he was not in favour of killing rats. He advised the people to prevent the breeding of rats by observing the principles of sanitation and cleanliness.

A Member: Is it true that Mr. Gandhi had killed a calf?

The President: It is irrelevant here.

Khan Bahadur Chahewala said that the Jains who formed only a small minority of the population of the city had no right to endanger the lives of 4,000,000 citizens on account of their religious beliefs.

Mr. Bhagubhai said that that was not a question of the religious belief of the Jains only but of the whole Hindu community.

Ultimately the resolution was thrown out by a large majority.

Naturally, the answer to all this ignorance and crossed-wires religion is education. This, the sole hope of India, is resisted violently by the Brahmins. Even Gandhi has railed against it. And the British, with force their only effectual weapon, have made slow progress.

Free primary education is now widely available, but illiteracy is still widespread.

Many of the larger cities have well-equipped universities, and there are a number of medical, engineering, and agricultural schools. The latter are not popular, for the Vayshas resist new methods stubbornly. Of the former, the Mohammedans and Parsees make good use. Educated Brahmins all want to go into government clerkships of which there are not nearly enough to go around. The legal profession claims a lot of students, for the Indians love litigation and will go to court on almost any pretext.

Educated Indians are apt to be very bright fellows. At Agra I talked with three college students (who walked up and introduced themselves, simply because they were eager to talk with any foreigner) who seemed to me to be remarkably well informed, and unusually curious about world affairs. One was studying law, another industrial chemistry, and the third hoped to go into government service.

At first the Indians resisted the British theory that English should be the language of the schools. Now all but a few die-hards embrace it, for it gives India—which has as many languages (seven chief tongues, with more than 200 dialects) as it has social and religious subdivisions—a common language. Educated Indians can now gather from all parts of the Empire, and in convention assembled harangue each other about the injustice of British rule to their heart's content. Around 2,500,000 Indians, out of a total population of 352,837,778 (1931 census) can speak English.

One interesting observation with regard to Indian education is that failure to pass the examinations for a degree abashes the students not one whit. All such carry engraved cards with "B.A. (failed)" after their names. Many also hang a sign with this (to foreigners) amusing legend at the entrances of their homes!

Great Britain and Her Colonies

Rule Britannia

Somehow, perusal of newspaper and magazine articles on Foreign Affairs, read conscientiously but not with special pleasure in a desultory attempt to "keep up with the world," had led me to believe that the "British Empire" existed nowdays in name only.

Self-governing dominions, Home Rule, and mandated territories have superseded London-dominated colonies, we have been led to believe. And the British Empire, continues this rather widely believed fiction, is little more than an association of sovereign nations enjoying mutually favorable and reciprocal trade agreements.

That, ladies and gentlemen, is a lot of eyewash.

Canada, Australia, and New Zealand, it is true, enjoy a high degree of self-determination under a benevolent protectorate.

But all the self-determination enjoyed by British Malaya, India, Palestine, Syria, and the African colonies—as well as a Whitman's Sampler assortment of islands and islets in every sea,—you could put in your great-grandmother's thimble.

Great Britain is most definitely an Empire—still—and quite consciously and conscientiously so.

Its colonial territories are ruled by English statesmen, backed by detachments of the English army. And much of the *business* conducted in these territories is owned by English capitalists, and directed by English executives.

* * *

Colonial Careers

All of this is a very fine thing for the young Englishman. The possibilities inherent in a "colonial career" are at once magnificent and multifarious.

If he aspires to become a statesman or diplomat he can cut his eye-teeth on colonial government and politics. If he looks forward to the life of a "gentleman" the colonial armies provide just the right background, training, and social standing. If he is ambitious for money and power, if he has a restless, roving nature, if he wants to see a bit of the world before he "settles down," or if he is simply seeking a job—there's the world of British business enterprises in the colonies.

We got our first glimpse of these "colonial career men" in Australia, had longer looks at them in Malaya and India, Egypt and Palestine, and were simply inundated by them aboard the P.B.O. steamer *Maloja* (Bombay) to Port Said) and *Naldera* (Port Said to Marseilles).

Both ships were bound for London. The *Maloja* had started its trip from Sydney, the *Naldera* from Hong Kong; and each had picked up British "Colonial career men" at practically every port of call along the way. These men were going home "on leave."

Most of the passengers got on at Bombay; and let me tell you, those ships were crowded. There were two "sittings" for every meal, plus an extra one for the children. Every cabin was loaded to the port holes. The supply of deck chairs was at no time of the day adequate for the demand. And not a man on a board ever got near the writing desks or lounge chairs, for they were always commandeered by women (with caustic and impatient feminine waiting lines for each desk, table, and chair).

Naturally this state of affairs led to many annoyances and inconveniences. The service, or lack of it, was appalling. Quarters were cramped. On each ship the writer was in a continual running fight with ship's officers and members of the crew (more on this later). In the crush of the baggage handling aboard the *Naldera*, a new leather suitcase I had purchased in Singapore was smashed, and the contents ruined or lost. (Included in the lost articles, the boys back home at 5229 Cass will be glad to learn, was my Phi Beta Kappa key.)

But compensating for the irritation and the poor facilities for getting any work done was the fine welcome given me by the British people aboard, and the opportunity for increasing, enlarging, and broadening my knowledge of the British Empire, and in particular, India.

These people are World Citizens, in every sense of the word, and their informed alertness on today's fuse-lit international situation was most interesting and enlightening to a tyro like myself.

When I say, "welcome" I mean just that. My "American accent" gave me away immediately, and as the only United States citizen aboard either ship, these supposedly reserved Englishmen and Scotsmen took me right into their groups, cliques, parties, and whiskey-and-soda arguments.

This "leave" business is an institution. Whenever an Englishman signs a contract to go out to a "colony" on a job or in the army, he stipulates the period of "leave" (time at home in England) he expects out of each year.

This period varies, of course, according to the importance of the individual and the number of his years in service abroad. But in general, it runs about three months out of the year—usually the summer months, for which "leave" period my shipmates were enroute.

Sometimes they double up on these leaves, making it six months every two years, or nine months after three years.

In any event, these long vacations undoubtedly make colonial careers more attractive.

* * *

Buttons vs. Americanism

Unless it be wartime, Americans are so little aware of their army that a military career occurs to comparatively few boys as a means of getting on in the world.

But in the Old World countries, the Army still ranks with Government as the highest of all possible careers. The social standing of an army man is unimpeachable; he is accepted everywhere. Indeed, his company is courted.

And when not fighting, they lead a most pleasant life, replete with sports, amusements, and social activity.

What's more, they have *authority*.

This business of *authority* extends further than the army; it is assumed by practically every man wearing brass buttons on a British boat or train, or in customs houses and the like, that he has the right to *order* you peremptorily to do, or cease doing, anything he chooses.

That sort of thing simply doesn't go with a real American. The writer has never submitted kindly to discipline, particularly when it comes from dumb clucks. Like my boss, F. M. COCKRELL, I object to being "pushed around."

As a result, I had more than my share of battles. One of them, on the *Maloja*, turned into an actual physical combat, after which, I am happy to state, I was left pretty much alone.

At another time—I think I'll bore you with this incident, just to illustrate the point—I thought I might not get out of Palestine.

On the train from Lydda, Palestine, to Kantara, Egypt, I was trying desperately to catch up with my writing. Half a dozen times I was interrupted by Brass Buttons from each country to show my passport, open luggage for customs inspection, pay another fee. (It costs money to get in and out of every country—police fees, customs fees, health inspection fees, and what-not.)

Among the Buttons was one burly individual who handed me a long form to fill out. This I did, and placed the completed form on the seat in my compartment, next to the aisle where he would see it on his return. Then I resumed my oft-interrupted writing.

In a moment Buttons was back.

"Where's that form?" he bellowed.

"There it is," I pointed, and went on writing.

"Hand it to me!" he commanded.

At that my Americanism balked.

"Pick it up yourself," I retorted, defiantly.

Buttons worked himself up into a frothy lather of rage.

"I am insult," he shouted, lapsing into imperfect English (he was Egyptian), and stamped off.

The form lay there for some time, neither of us making a move.

But when I returned from lunch in the "restaurant car" the form was gone. And since nobody attempted to prevent my egress from the train at Kantara, I presume that Buttons picked it up when nobody was looking.

* * *

Americans Abroad

This trip has begun to open my eyes as to why Americans are considered such ill-bred travelers by foreigners.

The answer is that Americans are provoked to the exasperation point by the service and the *attitude* of those who are supposed to give the service.

In America, when you purchase a service—such as travel on a train or boat—the people rendering that service are working for *you*. Abroad you work for *them*.

To begin with, everything is all bound up in rules, regulations, restrictions, and redtape. When you *as an individual* desire anything, you are met with an upraised eyebrow, and an annoyed "It can't be done."

You do as you are told, accept whatever they choose to let you have, and like it.

The American principle of "the customer is always right" is the rankest heresy in most of the countries and ships on this itinerary, particularly those under British control.

Save the Cost of
OVER MOTORING
ON THE HARD-TO-START JOBS

Use Century Type SCH High Starting Torque Squirrel Cage Motors—the starting ability built into them puts hard-to-start loads into motion—such as Freon Compressors, Conveyors, Deep-Well Plunger Pumps, Heavy Fly Wheels.

In most hard-to-start cases they will save the costly expense of over motoring that would be necessary if standard squirrel cage motors were used.

CENTURY ELECTRIC COMPANY
1806 Pine Street . . . St. Louis, Mo.
Offices and Stock Points in Principal Cities

Century MOTORS

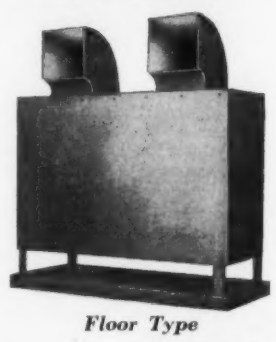
• UP TO 600 HORSE POWER •

The Buyer's Guide

Special rates apply to this column only. Write Advertising Dept. for full information.

PEERLESS AIR CONDITIONING UNITS

Band Box Type



Floor Type

Ornamental Comfort Cooler for use in fine offices, shops and homes.

Peerless Standard Fin Coils, with "rifled tubing" and many other exclusive features, are used in all models.

Heavy Duty Air Conditioner for use with duct work. Also available in ceiling type.

Write for prices and catalog

PEERLESS ICE MACHINE CO.

CHICAGO 515 W. 35th St. — TWO FACTORIES — NEW YORK 43-00 36th St., L.I.C.

Representatives in all principal cities

TYPE KR— 30 MODELS

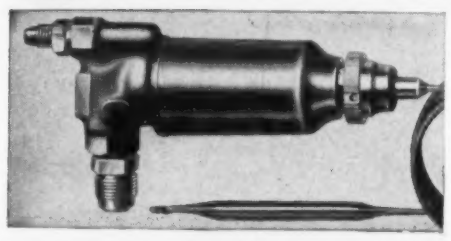
RANCOSTAT

—the **Stainless Steel** Thermostat

Just name the make and model of refrigerator—and your Ranco Jobber will give you the right replacement. Short work—and a job that's sure to please! Write for KR Bulletin giving complete information on the complete Rancostat line.

The Automatic Reclosing Circuit Breaker Co. Columbus, Ohio.

STANDARD REFRIGERATING APPLIANCES



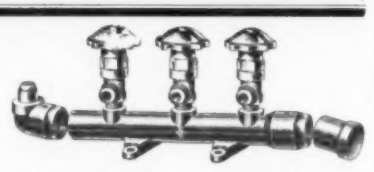
THERMOSTATIC EXPANSION VALVES

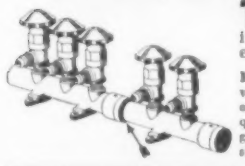
Write for bulletin on complete line covering refrigerating appliances, liquid line filters, dehydrators, acid neutralizers, standard parts and materials, service tools, shaft seals, bearing metals and parts. Descriptive literature will be gladly furnished on any or all of these lines on request.

AMERICAN INJECTOR COMPANY 1481-14th. Street, Detroit, Mich.

The Farthest Advance in Manifold Design

IMPERIAL



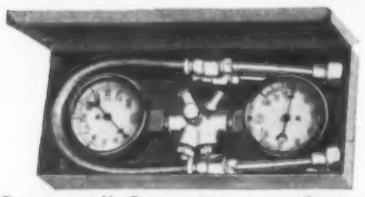


THE latest type for refrigeration and air conditioning. Not the usual type, of brass bar stock, but forged brass, with integral mounting plate. Seasonal cracking and splitting entirely prevented. Extra-large flow area.

If more than 2 or 3 valves are required, 2 or more manifolds are quickly soldered together; see arrow in sketch at left.

Order from your jobber. Write also for new catalog 77-E

IMPERIAL BRASS MFG. CO.
565 S. Racine Ave., CHICAGO



Complete Charging Kits

consisting of

1-R100 Charging Connection

2" or 2 1/2" H. P. & Compound Gauges.

2-12" Flexible Charging Lines

1-Sliphandle Valve Wrench.

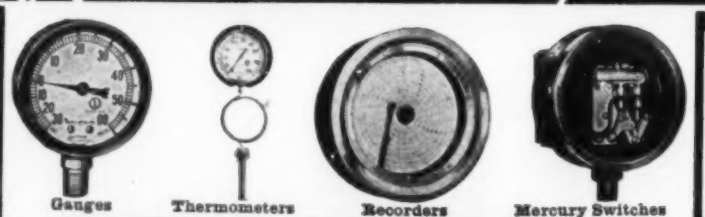
1-Metal Box for Entire Assembly

R103 - 2" Gauge Kit - - - **$5.75**
R104 - 2 1/2" Gauge Kit - **$6.15**

The above kits are the most necessary item to your tool kits. Get them from your jobber.

Manufactured by
FRANKLIN MACHINE PRODUCTS
663 Broadway
New York, N. Y.

Refrigeration Instruments by Marsh



Gauges — Thermometers — Recorders — Mercury Switches

Jas. P. Marsh Corporation
2067 SOUTHPORT AVE., CHICAGO, ILL.

Fox

Fox Furnace Co.
Elyria, Ohio.

Fox Furnace Co. makes seven series (Nos. 20, 80, 100, 400, 720, CA, and D) of winter air conditioners, performing the functions of heating, humidifying, and cleaning.

Cabinets for these units range in heights of 60 to 67 inches, to widths of 40 to 99 inches, and depths of 40 to 80 inches. Cabinets are of steel with baked enamel finish, and are insulated.

Blower equipment consists of American Blower "Sirocco" centrifugal fans with diameters of from 9 to 21 inches, and operating from capacitor motors of ¼ to ¾ hp. Total circulation of air range is from 480 to 2,880 c.f.m. Air velocities are from 300 to 500 f.p.m. Hot water can be used as the heating medium.

Heating capacity range is from 50,000 to 300,000 B.t.u. per hour.

Both spray and evaporator type humidifiers are used. Humidifying capacity is at the rate of 10 lbs. of water per hour with 30 lbs. spray pressure. Either tap water or hot water may be used.

Air cleaning is by Arco throwaway-type oil coated filters. Control equipment furnished includes a thermostat, humidistat, limit switches, fan switches, relays, damper motors, valves, thermostat pilots, and pressure regulators.

General Electric

General Electric Co., Bloomfield, N. J.

Functions—Heating, humidifying, and cleaning.

Cabinet—G-E steel cabinet, insulated, with two-tone gray finish with chrome and black trim.

Blower—G-E centrifugal blower. Type DIDW on models LB-4, LG-3, LG-4; type SISW on LG-1 and LG-2.

Air Circulation—Model LB-4; air intake in back, discharge in two sides; all others: intake on top front, discharge on top rear. Fresh air intake may be provided in return duct on all models.

Heating Medium—Direct fired, with oil used as fuel on model LB-4 and gas on all other models.

Humidifier—Pan type using water direct from city mains.

Air Cleaning Medium—Viscous impingement type filters.

Controls—Humidistat and thermostat.

Special Features—Model LB-4 is a complete oil furnace and air conditioner of coordinated design. All others are complete gas furnaces and air conditioners of coordinated design.

Model No.	PRICE F.O.B. Factory	Overall Dimensions H. x W. x D.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	HEATING Surface Sq. Ft.	HEATING Capacity B.t.u./hr.	Humidification Lbs./hr.	BLOWER Motor Hp.	BLOWER Speed R.p.m.	BLOWER Diam. In.	BLOWER Total C.f.m.	BLOWER Veloc. F.p.m.	BLOWER Input Watts
LB-4	$.....	66⅛ x 33⅛ x 59	600	1,150	....	133,000	10	⅛	....	12	1,600	...	..
LG-1	.....	49 x 20 x 63	575	650	....	35,000	2	..	....	12	500	...	..
LG-2	.....	49 x 20 x 63	800	950	....	70,000	4	..	....	12	1,000	...	..
LG-3	.....	49 x 40 x 63	1,175	1,350	....	105,000	6	..	....	12	1,500	...	..
LG-4	.....	49 x 40 x 63	1,400	1,650	....	140,000	8	..	....	12	2,000	...	..

Lennox

Lennox Furnace Co.

Functions — Heating, humidifying, and cleaning.

Cabinet—Lennox steel cabinet with enamel finish.

Blower — Lennox made blower powered by General Electric split-phase motor. Goodyear belt drive.

Air Circulation—Air intake and discharge both in top. Fresh air intake is provided. U. S. discharge grilles.

Type of Humidifier—Steam.

Air Cleaning Medium — Dustop filters.

Controls Furnished — Minneapolis-Honeywell thermostat.

Model No.	PRICE F.O.B. Factory	Overall Dimensions H. x W. x D.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	HEATING Surface Sq. Ft.	HEATING Capacity B.t.u./hr.	Humidification Lbs./hr.	BLOWER Motor Hp.	BLOWER Speed R.p.m.	BLOWER Diam. In.	BLOWER Total C.f.m.	BLOWER Veloc. F.p.m.	BLOWER Input Watts
A	$790.00	59 x 40 x 72	1,475	1,550	75	125,000	1*	¼	338-467	12	1,650	350	200

*Gallons.

Herman Nelson

Herman Nelson Corp.
Moline, Ill.

Functions — Heating, humidifying, and cleaning.

Cabinet — Steel cabinet, enamel finish, chromium trim. Insulated with cellular asbestos.

Blower—Specially designed blowers with "streamlined" housing.

Air Circulation—Air intake and air discharge both in top of the unit.

Heating System—Direct fired.

Air Cleaning Medium—Glass wool replaceable filters.

Controls Furnished — Thermostat, positive humidity control, damper control which keeps cold air from being delivered to the rooms during the heating season.

Model No.	PRICE F.O.B. Factory	Overall Dimensions H. x W. x D.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	HEATING Surface Sq. Ft.	HEATING Capacity B.t.u./hr.	Humidification Lbs./hr.	BLOWER Motor Hp.	BLOWER Speed R.p.m.	BLOWER Diam. In.	BLOWER Total C.f.m.	BLOWER Veloc. F.p.m.	BLOWER Input Watts
B-1000	$.....	62⅞ x 64½ x 60¼	....	....	....	120,000	..	⅓	578	12	1,400	...	..
B-3000	.....	69 x 76½ x 72⅜	....	....	....	180,000	..	½	578	14	2,100	...	..
HE-2400	.....	67 x 60⅝ x 47	....	....	54	113,000	..	¼	560	12	1,225	...	..
HE-2700	.....	67 x 60⅝ x 50	....	....	57	138,000	..	¼	560	12	1,500	...	..
HE-3000	.....	67 x 61¾ x 53	....	....	61	165,000	..	⅓	560	14	1,790	...	..

Norge

Norge Corp., Detroit, Mich.

Functions — Heating, humidifying, and cleaning.

Cabinet—Norge steel cabinet, enamel finish.

Blower—Norge blower, belt driven.

Air Circulation—Air intake in top, air discharge in top.

Heating System—Direct fired.

Type of Humidifier—Controlled vaporizer.

Air Cleaning Medium—Throwaway filter.

Controls Furnished — Thermostat, semi-automatic humidity controller.

Special Features—Automatic filter by-pass and indicator, controlled water heater.

Model No.	PRICE F.O.B. Factory	Overall Dimensions H. x W. x D.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	HEATING Surface Sq. Ft.	HEATING Capacity B.t.u./hr.	Humidification Lbs./hr.	BLOWER Motor Hp.	BLOWER Speed R.p.m.	BLOWER Diam. In.	BLOWER Total C.f.m.	BLOWER Veloc. F.p.m.	BLOWER Input Watts
DO-8-H-6*	$.....	64 x 40 x 68	980	1,354	104	200,000	7	¼ & ⅓	400-500	16½	2,200	...	350

*Or DG-8-H-6 (gas heat).

Rudy

Rudy Furnace Co.
Dowagiac, Mich.

Functions — Heating, humidifying, and cleaning.

Air Circulation—Air intake at top (conditioner section), air discharge at top (furnace section).

Cabinet—Rudy steel cabinet with black enamel finish and stainless steel trim. Insulated with air-cell asbestos insulation.

Blower—Made by Rudy Furnace Co. Driven by General Electric motor.

Heating System—Direct-fired equipment. Models 20, 22, 24, 400, 500, 600, 750, 950, and 1200 are coal-burning furnaces. Models 125 and 200 are oil burners. Models 80, 100, 125, 150, 200, and 300 are gas heat furnaces.

Type of Humidifier—Evaporating pan type, float and valve control.

Air Cleaning Medium—Owens-Illinois filters.

Controls Furnished—As specified for a particular installation.

Model No.	PRICE F.O.B. Factory	Overall Dimensions H. x W. x D.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	HEATING Surface Sq. Ft.	HEATING Capacity B.t.u./hr.	Humidification Lbs./hr.	BLOWER Motor Hp.	BLOWER Speed R.p.m.	BLOWER Diam. In.	BLOWER Total C.f.m.	BLOWER Veloc. F.p.m.	BLOWER Input Watts
20-AC	$155.65	64 x 64½ x 36	....	1,345	....	75,000	..	⅛	....	..	800	...	..
22-AC	173.55	66 x 67 x 40¾	....	1,620	....	94,000	..	⅛	....	..	1,000	...	..
24-AC	188.90	68 x 66 x 44½	....	1,970	....	115,000	..	⅛	....	..	1,000	...	..
400-AC	146.15	64 x 64½ x 36	....	1,145	....	58,800	..	⅛	....	..	800	...	..
500-AC	159.90	66 x 66 x 40¾	....	1,415	....	78,400	..	⅛	....	..	1,000	...	..
600-AC	174.15	68½ x 68 x 44½	....	1,645	....	98,000	..	⅛	....	..	1,000	...	..
750-AC	188.40	68 x 68 x 46	....	1,870	....	117,500	..	⅛	....	..	1,000	...	..
950-AC	240.00	71 x 76½ x 48	....	2,350	....	203,000	..	¼	....	..	1,200	...	..
1200-AC	314.75	56½ x 82 x 56	....	2,970	....	320,000	..	⅜	....	..	1,800	...	..
125	300.00	65 x 42 x 62	....	1,500	....	100,000	..	⅛	....	..	1,000	...	..
200	450.00	65 x 67½ x 52	....	2,195	....	160,000	..	¼	....	..	1,200	...	..
80-AC	181.50	65 x 47¾ x 52	....	1,120	....	64,000	..	⅛	....	..	800	...	..
100-AC	231.50	65 x 54¾ x 52	....	1,725	....	80,000	..	⅛	....	..	1,000	...	..
125-AC	241.50	65 x 54¾ x 52	....	1,780	....	100,000	..	⅛	....	..	1,000	...	..
150-AC	256.50	65 x 60½ x 52	....	1,825	....	120,000	..	⅛	....	..	1,000	...	..
200-AC	353.25	65 x 73½ x 52	....	2,750	....	160,000	..	¼	....	..	1,200	...	..
300-AC	457.25	65 x 112 x 52	....	2,950	....	240,000	..	¾	....	..	2,600	...	..

Rega

Rega Mfg. Co., Rochester, N. Y.

The Rega humidifier is designed for use in central-station type winter air-conditioning systems.

It measures 5 inches high by 4¾ inches wide, and should be attached to a rafter or some means of support above the furnace. A small round hole is made in the outside jacket of the furnace at the top and the nozzle is inserted in the hole, being held in place with two sheet metal screws. A piece of 3/16 inch copper tubing connects the humidifier with the nozzle.

The transformer is connected with the power line and with the humidifier. Connection is made with a humidistat in the conditioned area through a thermostat bonnet control, and transformer. Thermostat bonnet control prevents the nozzle from operating on a cold furnace.

When the humidity in the room drops below the point set in the humidistat, the humidistat throws a switch making an electric contact with the humidifier. A heating unit which does not get any hotter than 600° F. is placed below the expansion wafer on the humidifier heating the wafer, and the wafer expands. The wafer in expanding opens the snap-action water valve, allowing the water to flow to the nozzle.

When the air in the conditioned space is humidified to the point set on the humidistat, the humidistat breaks the electric current to the humidifier and the expansion wafer cools and contracts, allowing the water valve to close and shut off the flow of water to the nozzle.

The Rega humidifier operates at a spray pressure of 30 to 120 lbs. per sq. in., and has a humidifying capacity of 10 lbs. of water per hour.

Equipment furnished with the Rega humidifier consists of a self-cleaning spray nozzle, water valve, humidistat, transformer, thermostat bonnet control, copper tubing, water pipe connection.

Air Conditioning

Tests in Grand Coulee Workers' Homes Show How Insulation Will Reduce Heating Costs

By Homer J. Dana and R. E. Lyle

THE amount of heat required to maintain a comfortable living temperature in a residence depends upon the outside temperature and the degree to which the structure is insulated against heat losses. In most residences, which are heated with coal or gas, but very little thought has been given to insulating against preventable heat losses, with the result that needless extravagance in fuel is incurred each year.

Tests have been made which show that the investment required to properly insulate the average residence will be returned in the cost of fuel saved within a period of three years. (U. S. Bureau of Industrial Research.)

Strangely enough, the need for heat insulation is commonly neglected in coal and gas heated homes but is readily recognized when associated with electrical house heating. The need for insulation and the economies possible are almost equally as important in the one case as in the other.

Object of Study

Object of the study embraced by this report was to determine the actual average working effectiveness of applying heat-insulating material to an un-insulated house.

The fundamental heat conductivity of insulating materials is known or may be easily determined. Furthermore, it is not a difficult matter to calculate the heat loss which will take place through certain combinations of materials such as go to make up the walls, floors, and ceilings of a house.

But such calculations must necessarily be based upon certain assumed data which can not easily be predetermined. For instance, the loss due to "chimney action" in air spaces in the wall, emissivity of the wall surfaces, variation in temperature between floor and ceiling of the room, degree of infiltration taking place, etc., are usually approximated and may vary considerably under different conditions.

Types of Homes in City

In addition to more than 60 dormitories and bunk houses, Mason City is composed of a large number of houses located on a level plateau along the east bank of the Columbia River, of types as follows:

64 Type "A" or one-room houses
127 Type "B" or three-room houses
88 Type "C" or five-room houses
7 Special houses for officials.

Studies were confined primarily to the Type "B" houses because there are so many of them, they are heated with identical equipment, and occupied by average families. These houses are pre-fabricated frame construction, built at Spokane, Washington, and trucked in sections 100 miles to the site where they were erected.

The Type "B" houses, on which these insulation tests were made, are approximately 20 x 28 feet in size, are set on concrete piers, and boxed clear to the ground, after which they were banked with earth, thus sealing the space under the floors against cold winds. The side walls are of ¾-in. sheathing, tar paper, and matched siding. The roof is of ¾-in. ship lap covered with red roofing felt.

On the inside, all walls and ceiling are finished with ½-in. Insoboard which is a wheat straw product. This material, which comes in large sheets, is nailed to the 2 by 4 studding and ceiling joists, and the joints are covered with thin wooden strips or battens.

Double Thickness Floors

The floors are of double thickness with tar paper between. There are no basements and all residences are single story. There is a small space between the ceiling and the roof, with vent louvers in each gable.

Three-wire electrical service to each house provides 120 volts for lights and refrigeration, 120-240 for the electric range, and 240 for the electric air heaters and for the water heater. The water heater, of the clamp-on type, is thermostatically controlled. Air heating is accomplished with portable heater units located in each room. Provision was made for capacities as follows:

Living room	5 kw.
Kitchen	3 kw.
Bedroom	4 kw.
Bath	1½ kw.

With such a large number of houses available which were identical in size, construction, and type of heating, an excellent opportunity was afforded to study the actual effectiveness of applying additional heat insulation. Therefore, extensive tests were undertaken in order to obtain data on the comparative heat losses in un-insulated houses and in specially insulated houses.

Type 'B' Used for Tests

The type "B" house was chosen for these tests. It has living room, kitchen, bedroom, bathroom, and large closet. At the rear is an enclosed porch for laundry, etc.

Two of these dwellings were chosen as check houses, representing a very common type of construction without special heat insulation. Other houses of the same size and type, and located in the same group were equipped with special insulation intended to reduce the heat losses through the walls and ceiling of the building.

There were six different kinds of building insulation employed in the tests. No attempt was made to evaluate any one insulation as against another, but rather to determine the actual heat-insulating value of each when applied to an un-insulated house. The economic value of each as applied depends upon costs which may be obtained from supply houses. The general description of these materials follows:

A. "Thermax" consists of wood shavings impregnated with a solution of magnesite, slightly compacted and baked into a rigib slab. This slab is nailed to the studding and joists of a house and, in addition to its properties as a heat insulator, it serves instead of lath as a base for the usual plaster finish of a room. The inner surface of all exterior walls and ceilings of the two test houses were treated with one inch of Thermax which was also plastered. No Insoboard was used in these houses. The resulting wall was composed of ¾-in. siding, tar paper, ¾-in. sheathing, 3½-in. air space, 1-in. Thermax, and ½-in. plaster.

B. "Metallation" consists of a heavy craft paper approximately .01 inch thick and coated on each side with bright aluminum foil approximately .0015 inch thick, and cemented on. This material in sheet form, 24 to 30 inches wide, was nailed directly to the edge of the ceiling joists and the exterior wall studding in the room. Three-quarter inch firring strips were next applied and to these was nailed the standard ½ inch Insoboard finish of the houses. The section of the insulated wall, therefore, included outside pine siding, tar paper, sheathing, 3½ inches air space, metallation, ¾ inch air space, and ½ inch Insoboard.

C. "Mineral wool," made in this case from lead slag, consists of finely spun threads loosely packed into the air spaces of the outside walls and ceiling. Its insulating value rests largely in its ability to subdivide the air space and prevent the circulation of the entrapped air. The resulting wall consists of siding, tar paper, sheathing, 3½-inch mineral wool, and Insoboard. The ceiling was covered with 3-inch mineral wool. This building had a cement basement, ceiling of ½ inch Insoboard.

D. "Zonolite" consists of a non-metallic ore possessing bright flake-like characteristics similar to sheet mica. When subjected to certain heat treating processes, the ore is greatly expanded in volume, resulting in a large volume of entrapped air finely subdivided. The usual air spaces in outside walls were filled with this material, resulting in a section composed of siding, tar paper, sheathing, 3½ inches Zonolite, and ½ inch Insoboard. Ceilings were covered with 3 inches of Zonolite.

E. "Unifil" consists of a non-metallic ore which when processed results in a bright, light weight, flaky substance resembling mica, or muscovite. When expanded in the heating process, these flakes partially separate, thus entrapping air in finely subdivided layers. This material was applied to fill the air spaces in outside walls and ceiling of one of the standard test houses, and to fill the ceiling only of another test house. Thickness on ceilings was 3 inches.

F. "Diatomite," as prepared for use as a building insulation, comes in finely powdered form. It consists of tiny lime skeletons of prehistoric water life which are porous and entrap air in exceedingly small subdivisions. This material was applied to the ceiling only of two of the standard test houses. Thickness was 2 inches and 3 inches respectively.

A standard routine was followed in making all of the radiation tests. Several hours before the tests were begun the electric heaters were adjusted to maintain the temperature in the house uniform throughout. Thermometers were located in each of the rooms at a point approximately 5 feet from the floor and were always located at the same relative points in all of the houses tested.

Adjustable heater units of the Wesix portable dynamic type were distributed throughout the house in such a way as to aid in the establishment of a uniform temperature. A special auto-transformer with taps was provided to control the voltage to one of the heaters to afford fine adjustment of input.

Electric fans were provided at certain points in the different rooms to assure temperature uniformity. Windows and doors were closed, window shades raised, and water heater disconnected. The only furniture present, in most of the tests, consisted of a dining table and four chairs.

The houses were heated from 2 to 8 hours prior to recording data, using only enough of the installed heater capacity to hold the room temperature at or near 70°. Two houses were usually tested at one time, using two complete sets of equipment. The

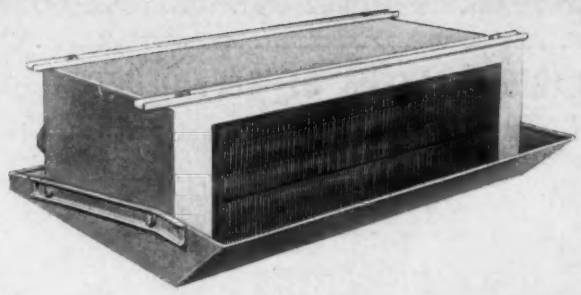
(Concluded on Page 29, Column 1)

Decision by the Mason-Walsh-Atkinson-Kier Co., contractors for the construction of the Grand Coulee dam, to use electricity for heating in the contractor's camp known as Mason City, automatically created the largest house heating laboratory in the world.

Through the courtesy of the contractors, the State College of Washington was accorded the privilege of using Mason City as a field laboratory for studying domestic heating with electricity and making tests on thermal building insulations.

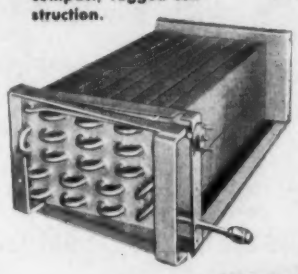
Homer J. Dana, assistant director of the State College Engineering Experiment Station, and R. E. Lyle, engineer of tests at Mason City, are the authors of this report.

KRACK-ENGINEERED
TRANS-E-FEX



THE FORCED DRAFT UNIT COOLER BUILT EXCLUSIVELY FOR REFRIGERATION IN TRANSIT

DUO TRANS-E-FEX Front View
Note top mounts, side bars, front deflector; compact, rugged construction.

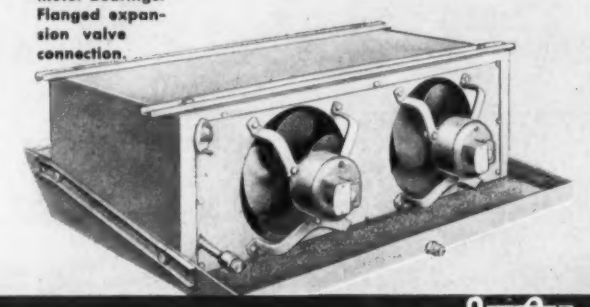


AIR-E-FEX Dehumidifying Fin Coil Element

National shippers of meat, milk, butter, eggs, dressed poultry, vegetables and other perishables rely on TRANS-E-FEX-cooled truckholds for trips of 1000 and more miles. Forced-draft principle, Air-E-Fex finned coil elements, high-efficiency fan motors, make this husky specially designed unit outstanding in safe, economical performance. DUO Trans-E-Fex for large, SOLO Trans-E-Fex for small truck bodies. Send for detailed information.

DUO TRANS-E-FEX Rear View

Large oil reservoir on motor bearings. Flanged expansion valve connection.



REFRIGERATION APPLIANCES, INC.
H. J. Krackowizer, President
1342 W. Lake Street, Chicago
RACKS KOILS KOOL

SILENT AS FALLING SNOW

THE GILMER V-BELT

Here's why the Gilmer V-Belt, for small unit V-drives, is held in high favor by consumers: Besides being sturdy and slipless, it's *noiseless*. In operation, it's as silent as falling snow. Made in standard sizes to fit all refrigerators, air-conditioning equipment, oil burners, beer pumps, water pumps, washers, woodworking tools . . . sleeved and marked for easy identification.

L. H. GILMER COMPANY, Tacony, Philadelphia

Gilmer BELTS
Makers of the world's best-known V-Belts

Branch Offices & Warehouses
NEW YORK CHICAGO DALLAS
SAN FRANCISCO SEATTLE

WRITE FOR THIS BOOKLET

SQUARE D-EVERYWHERE
SQUARE D COMPANY
REGULATOR DIVISION DETROIT, MICHIGAN
SQUARE D COMPANY, INC., LOS ANGELES, CALIFORNIA
SQUARE D COMPANY, CANADA, LTD., TORONTO, ONTARIO

The Buyer's Guide

Suppliers Specializing in Service to the Refrigeration and Air Conditioning Industries

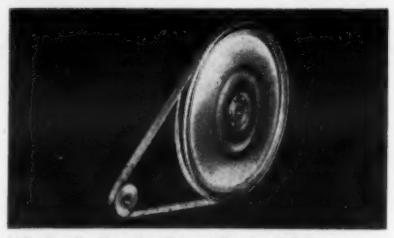
LEADING MAKERS OF REFRIGERATING AND AIR CONDITIONING EQUIPMENT STANDARDIZE ON

Dayton V-BELTS

● Because of their outstanding advantages Dayton V-Belts have been used as original equipment on leading makes of air conditioning equipment, electric refrigerators, washing machines and other appliances for many years.

Dayton V-Belts are the logical choice because they provide silent, dependable transmission—because their powerful grip prevents slippage—because they run smoothly without weaving, twisting or vibrating.

A nearby distributor carries a complete stock of Dayton V-Belts at all times and can quickly supply you.



Whether for Fractional or a Thousand H.P. there is a Dayton V-Belt Drive for the job.

Write us for price list and complete information.

THE DAYTON RUBBER MANUFACTURING CO. • DAYTON, OHIO

World's Largest Manufacturer of V-Belts

THE LINDERME TUBE CO. CLEVELAND

MANUFACTURERS

Seamless
Brass & Copper Tubing
Refrigerator Tubing
Water Service Tubing
Carton Packed Tubing
Formed Tubing
Electro Tin Plated Tubing

ACME PIPE COILS

"THE COILS BY WHICH OTHERS ARE JUDGED"

FLAT
DOUBLE FLAT
BOX OVAL
CYLINDRICAL
RECTANGULAR

HARDENING ROOM COILS

ACME PROCESSED

JACKSON **ACME INDUSTRIES, Inc.** MICHIGAN

PURO ELECTRIC WATER COOLERS

Thoroughly reinforced all steel attractively finished cabinets.

Complete line of different Models and Capacities.

Write for details and sales prices.

Puro Filter Corporation of America

440 Lafayette Street, New York City Spring 7-1800

DOORS Mean DOLLARS

The first place to look *for profit* in every refrigerator you service is the door gasket. After about 5 years' service a new gasket will pay for itself. You make the sale — the owner makes the saving.

Miller offers a simplified line of 20 gasket types which enables you to service 80% of all known makes of refrigerators.

Send for illustrated price list — don't overlook the profit possibilities of Miller Refrigeration Gaskets. *If not obtainable through your local jobber, write direct.*

Miller Rubber Company, Inc., Akron, Ohio, U.S.A.

IMMEDIATE DELIVERY

Miller

"Engineers in Rubber"

Schwitzer-Cummins

Schwitzer-Cummins
Indianapolis, Ind.

Functions—Cleaning and circulating.

Cabinet—Schwitzer-Cummins spot-welded steel cabinet, with lacquer finish. Split construction of cabinet to facilitate installation.

Blower—Schwitzer-Cummins "hy-duty" blower, with V-belt drive from Leland motor.

Air Circulation—Air intake at top, air discharge in center bottom half of split cabinet. Fresh air intake is provided.

Air Cleaning Medium—"Air-Maze" all metal filter.

Controls Furnished—Minneapolis-Honeywell thermostat.

Model No.	PRICE F.O.B. Factory	Overall Dimensions H. x W. x D.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	HEATING Surface Sq. Ft.	HEATING Capacity B.t.u./hr.	Humidification Lbs./hr.	BLOWER Motor Hp.	BLOWER Speed R.p.m.	BLOWER Diam. In.	BLOWER Total C.f.m.	BLOWER Veloc. F.p.m.	BLOWER Input Watts
14	$.....	25¼* x 34¼ x 33	255	310	....	....	..	¼	500	14	2,300	...	280
14-D	.....	25⅛* x 34¼ x 34½	325	380	....	....	..	¼	455	14	2,200	...	260

*Split construction. Bottom length is 16¾ inches for Model 14, 12⅞ inches for Model 14-D.

Thermal Unit

Thermal Units Mfg. Co.

Functions—Heating, humidifying, and cleaning.

Cabinet—Thermal Units steel cabinet, with lacquer or sprayed aluminum finish.

Blower—All-aluminum blower wheels, direct connected to Baldor motors.

Air Circulation—Air intake at side of unit, discharge at one end. Air intake optional. Uniflo grilles installed separately.

Heating System—Thermal Units cast aluminum heat transfer elements. Can be used with hot water.

Type of Humidifier—Spray type. Use 50° F. water.

Air Cleaning Medium—Wilson animal hair filter. Spray also helps in air cleaning.

Controls Furnished—Thermostat and humidistat.

Model No.	PRICE F.O.B. Factory	Overall Dimensions H. x W. x D.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	HEATING Surface Sq. Ft.	HEATING Capacity B.t.u./hr.	Humidification Lbs./hr.	BLOWER Motor Hp.	BLOWER Speed R.p.m.	BLOWER Diam. In.	BLOWER Total C.f.m.	BLOWER Veloc. F.p.m.	BLOWER Input Watts
10	$.....	16½ x 10½ x 38	100	150	20	14,000	24	1/30	850	6	300	300	..
12	.....	22½ x 12½ x 42	135	205	36	26,000	48	1/20	850	7	500	350	..
16	.....	27 x 16½ x 48½	190	280	64	46,000	72	1/10	850	8	900	400	..
20	.....	31 x 20½ x 52	270	380	100	72,000	96	⅛	850	9	1,500	450	..
24	.....	35 x 24½ x 59	350	470	144	103,000	120	¼	850	12	2,000	500	..
30	.....	39 x 30½ x 59	500	650	210	150,000	144	⅓	850	12	3,000	600	..

Gar Wood

Gar Wood Industries, Inc.
Detroit, Mich.

Functions—Heating, humidifying, and cleaning.

Cabinet—Gar Wood steel cabinet with lacquer finish. Double panel used on 100 series.

Blower—Gar Wood centrifugal, double inlet, multiblade blower with diameters varying from 14 to 20 inches, Century capacitor motor from ¼ to 1 hp., speed from 325 to 525 r.p.m., using from 250 to 1,000 watts, and delivering from 1,000 to 4,500 c.f.m.

Air Circulation—Air intake and discharge in top of cabinet with fresh air intake provided in duct.

Heating Surfaces—Young Radiator Co. coils on 300 and 500 models. Can be used with hot water.

Heating Medium—Direct fired on 100 series, steam on 300 and 500 series.

Humidifier—Evaporating pan with float control on 100 series; spray on 300 and 500 using 140 to 160° water.

Air Cleaning Medium—Wood cloth filter.

Control Equipment—Humidistat, thermostat, and blower control on 100 series; humidistat and pressure control for blower motor on 300 and 500 series.

Model No.	PRICE F.O.B. Factory	Overall Dimensions H. x W. x D.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	HEATING Surface Sq. Ft.	HEATING Capacity B.t.u./hr.	Humidification Lbs./hr.	BLOWER Motor Hp.	BLOWER Speed R.p.m.	BLOWER Diam. In.	BLOWER Total C.f.m.	BLOWER Veloc. F.p.m.	BLOWER Input Watts
322	$....fll	72 x 32¾ x 68¼	....	1,380	....	†	..						
323-A	.....	72 x 32¾ x 68¼	....	1,460	....	†	..						
323-B	.....	72 x 32¾ x 68¼	....	1,460	....	†	..						
324	.....	76 x 32¾ x 68¼	....	1,660	....	†	..						
502	.....	74 x 50¼ x 82¼	....	1,920	....	†	..						
503-A	.....	74 x 50¼ x 82¼	....	2,110	....	†	..						
503-B	.....	74 x 50¼ x 82¼	....	2,120	....	†	..						
504	.....	78 x 50¼ x 82¼	....	2,220	....	†	..						
102-A	.....	64 x 38 x 95	....	1,750	90	†	..						
102	.....	64 x 38 x 95	....	2,000	90	†	..						
103	.....	64 x 38 x 116	....	2,200	132	†	..						
104	.....	64 x 38 x 138	....	2,550	176	†	..						
105	.....	64 x 38 x 154	....	2,900	220	†	..						
105-C	.....	64 x 38 x 154	....	....	220	†	..						

†Capacity in 300 and 500 series range from 111,000 to 497,000 B.t.u. per hour; in 100 series from 120,000 to 400,000 B.t.u. per hour.

Savage Arms

Savage Arms Corp.
Utica, N. Y.

Savage Arms Corp. offers as a winter conditioner a small cabinet-type air circulator and humidifier, which may set on top of a radiator, on a window ledge (if outdoor air intake is desired), or on a small stand. It has a humidifying capacity of from ¼ to ½ gal. per hour.

EXTRA COPIES

Extra copies of Electric Refrigeration News which contain specifications are available at 25 cents each.

Besides this issue, which contains specifications of year-'round, summer, and winter air-conditioning equipment, the following issues of the News carried specifications data and are in stock:

Household Refrigerators, July 1

Commercial Machines, May 6

Orders for extra copies should be accompanied by the remittance.

SPECIFICATIONS OF HUMIDIFIERS

Corozone (Humidifier)

Corozone Air Conditioning Corp.
Cleveland, Ohio.

Functions—Humidifying.

Cabinet—Steel cabinet with brown crinkle finish in enamel.

Blower—"Made Right."

Type of Humidifier—Vapor.

Air Circulation—Air intake at top, air discharge at side.

Controls Furnished—Thermostat.

Model No.	PRICE F.O.B. Factory	Overall Dimensions H. x W. x D.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	HEATING Surface Sq. Ft.	HEATING Capacity B.t.u./hr.	Humidification Lbs./hr.	BLOWER Motor Hp.	BLOWER Speed R.p.m.	BLOWER Diam. In.	BLOWER Total C.f.m.	BLOWER Veloc. F.p.m.	BLOWER Input Watts
Standard	$.....	34 x 12⅓	16	23	....	.....	1 qt.	1/250	900	5	250	250	17
Deluxe	.....	37½ x 14½	20	33	....	.....	1 qt.	1/250	900	7	250	250	17

Hexcel

Hexcel Radiator Co., Racine, Wis.

Functions—Humidifying.

Cabinet—Pedestal type, steel and copper cabinet with black crackle finish and chromium trim.

Humidifier—Electric heating element charges water into a vapor for humidification.

Model No.	PRICE F.O.B. Factory	Overall Dimensions H. x W. x D.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	HEATING Surface Sq. Ft.	HEATING Capacity B.t.u./hr.	Humidification Lbs./hr.	BLOWER Motor Hp.	BLOWER Speed R.p.m.	BLOWER Diam. In.	BLOWER Total C.f.m.	BLOWER Veloc. F.p.m.	BLOWER Input Watts
HU-A	$39.75	30 x 12	28	33	....	.....	1½ pt.	..	....	6	....	...	..

Kleen-Aire

Continental Motors Corp.
Detroit, Mich.

Functions—Humidifying, cleaning, and circulating.

Cabinet—Steel cabinet with black crinkle finish.

Blower—United blower, belt driven by a United motor.

Air Circulation—Air intake in back of unit, discharge in front of unit.

Is Water Used in Humidifying Heated?—Yes, by 600-watt electrical heating element.

Type of Humidifier—Rotary belt.

Model No.	PRICE F.O.B. Factory	Overall Dimensions H. x W. x D.	WEIGHT Net Lbs.	WEIGHT Gross Lbs.	HEATING Surface Sq. Ft.	HEATING Capacity B.t.u./hr.	Humidification Lbs./hr.	BLOWER Motor Hp.	BLOWER Speed R.p.m.	BLOWER Diam. In.	BLOWER Total C.f.m.	BLOWER Veloc. F.p.m.	BLOWER Input Watts
4	$13.50	13 x 10 x 7	10	12	....	.....	1 pt.	30*	1,400	6	....	...	..

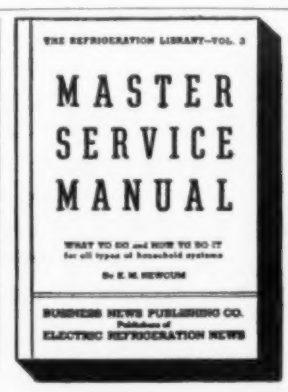
*Watts.

Hosiery Shops Conditioned With Servel Equipment

SPRINGFIELD, Ill. — The New Mode Hosiery Shops recently purchased air-conditioning equipment for shops at Champaign and Peoria, reports Capital City Paper Co., Servel distributor.

The Champaign installation includes two model WAD-100 air-conditioning units, and two model ACFD-101 floor type units.

In the Peoria shop, one model WAD-100 and one ACFD-101 are used.



The Master Service Manual ($3.00 per copy) includes the necessary instructions for servicing all the fundamental types of household systems. Detailed instructions for the servicing of more than a dozen "orphan makes" are also included.

The Refrigeration and Air Conditioning Specifications Book ($3.00 per copy) will contain detailed comparative data which every dealer, salesman, and service man has been wanting.

Combination Price for both Books, $5.00

THE REFRIGERATION LIBRARY—VOLUME 4
REFRIGERATION and Air Conditioning SPECIFICATIONS
For ALL MODELS and MAKES HOUSEHOLD and COMMERCIAL
Including New Designs for 1936
BUSINESS NEWS PUBLISHING CO.
ELECTRIC REFRIGERATION NEWS

Tests Show Value Of Insulation in Home Heating

(*Concluded from Page 27, Column 3*)

same equipment was used on the same house on succeeding tests.

Account was taken of the number and voltage of the lights burned in the house during the tests, and allowance was made for the heat given off by the man making the tests. Most of the closed tests were made at night because more uniform outside temperatures existed at that time.

Watt Input Recorded

By means of a graphic recording wattmeter connected into the electrical service to the building under test, record was made of the watts input to maintain a stable inside temperature. A special connecting device with cables to the instruments was used to permit locating the meters inside the house, and still have them connected into the service cabinet outside. A special device admitted the necessary wires through the window without permitting air leakage into the room.

A recording thermometer with a temperature bulb exposed to the outside air some 10 feet above the ground on the north side of the laboratory building gave a continuous record of the outside air temperatures during the test. A. U.S. Weather Bureau anemometer gave a continuous record of wind velocity. Careful note was made of the wind direction.

Careful note was made that all windows and doors were properly closed and that there was no opportunity for excessive infiltration of air through cracks or crevices, or ill-fitting sashes. Note was made each time an outside door was opened and care was taken to reduce the number of openings to a minimum.

Watts Input Equals Heat Loss

When a stable condition had been established inside the building and a stable condition of wind and temperature existed outside, then the number of watts input represents the heat loss through the walls, floor, and ceiling of the building.

During each test the following data were taken: outside temperature, wind velocity and direction, temperature in each room, electrical input, line voltage, number times door was opened, number lights burning, electrical connections, and observations of weather.

The technique of making these tests was standardized to avoid variation in data on this account. Notes were made frequently on the watt-meter record during the test, citing any pertinent information. The curve on the record was corrected by means of a calibration curve and zero correction. Where frequent voltage fluctuation took place during a test, an integrated average was determined for the watts input.

Care Taken to Make Data Accurate

In those tests made on houses which were occupied by tenants, calculation was made of the heat supplied by the hot water tank and from other sources, such as the reserve heat in an oven, etc.

Attempt was made to maintain all rooms in the house at the same temperature during the test. On this basis the direction of the wind should have scarcely any effect upon the heat loss through walls of the house. The difference in window exposure on different sides of the house, however, would cause the heat loss through the glass to depend somewhat upon wind direction. Inasmuch as there was not a wide difference in wind velocities in different tests, no attempt has been made to correct the data for this factor. The curve of radiation loss, as drawn, tends to equalize the differences due to differences in wind velocity.

These tests were made possible through the cooperation of the firms which furnished the insulating materials. Some of the materials are recognized as inferior, and results of the tests show some such differences. On the other hand, there may be compensating features such as ease of installation, lower first cost, etc., which in the end, tend to equalize the economic value of the various materials submitted.

After all, the object of these tests was to draw attention to the preventable heat loss from buildings and to show the saving that can be effected by the addition of insulating materials to the walls and ceiling of a residence.

As a matter of fairness to all contributing firms in this series of tests, the insulations are listed in the data as 1, 2, 3, 4, etc.

Fig. 1 Shows Savings

In Fig. 1 comparison is made between the heat loss through the walls and ceiling of a standard house as compared to the heat loss through other houses of the same size and type, the walls and ceiling of which were specially treated with a certain type of insulation. The curves represent an average of the data obtained.

As an illustration of the value of insulation, take the case shown in Fig. 1. The heat loss from the insulated building at a 60° difference of temperature between inside and outside is 5,950 watts. The heat loss from the uninsulated building is 9,100 watts, or a difference of 3,150 watts. If the insulated house were operated for two weeks during which time the outside temperature remained 10° above zero and the inside temperature were maintained at 70° for 14 hours per day, the saving of heat would amount to 617.4 kilowatt hours.

Save 300 Lbs. of Coal

Taking a coal furnace as being 50% efficient, which by the way, is probably better than the average, and based on coal at 14,000 B.t.u. per pound as fired, the use of the No. 3 insulation would save 300 lbs. of coal during the two weeks operation.

By taking the average outside temperature of different periods of the year during which heat is needed in a residence, it would be possible to calculate the yearly saving due to the added insulation, and from this figure could be derived the net saving from a given investment in heat insulation.

This does not take into account any other factors such as comfort or healthful living conditions, which might increase the returns from applying heat insulation.

Table 1 shows test data for some of the insulated houses. Table 2 shows data taken on the uninsulated houses.

Figure 1

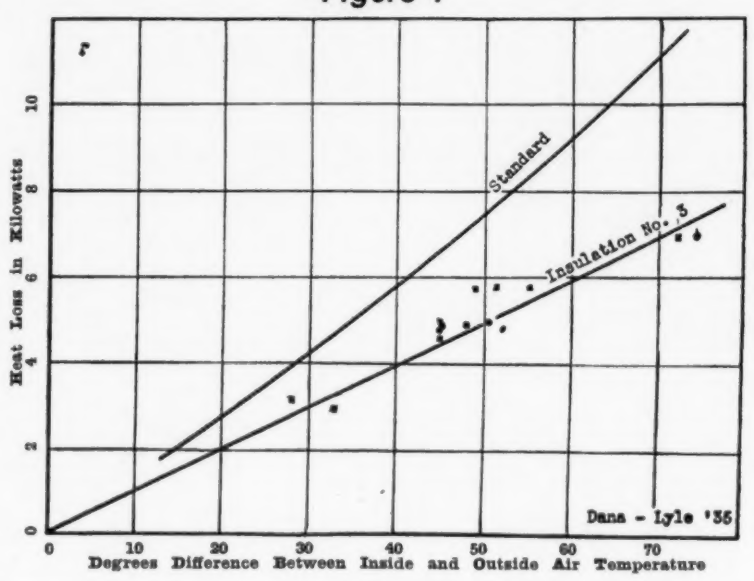


Table 1—Test Data on Insulated Houses

Date	Time	Temperatures Outside	Inside	Diff.	K.W. Input	W/Deg. F.
Insulation No. 2b						
Dec. 19	11:30 P.M.	36	70	34	3.900	114.6
Dec. 26	11:00 P.M.	24	70	46	5.095	110.6
Jan. 12	10:00 P.M.	28	73½	45½	5.235	115.0
Jan. 14	5:00 A.M.	15	71½	56½	7.006	124.0
Jan. 16	11:00 P.M.	33½	74½	41	5.500	134.0
Jan. 17	8:00 A.M.	21	76½	55½	5.460	98.5
Jan. 19	9:00 A.M.	− 2	73	75	8.990	119.8
Jan. 23	10:30 P.M.	37	71	34	4.255	125.1
Insulation No. 3a						
Dec. 20	10:30 P.M.	42	70	28	3.120	111.4
Dec. 28	12:30 A.M.	25	70	45	4.835	105.0
Jan. 13	9:00 P.M.	22	71	49	5.675	115.7
Jan. 15	9:30 P.M.	20	71½	51½	5.785	112.3
Jan. 16	7:30 A.M.	21	76	55	5.790	105.2
Jan. 18	11:00 P.M.	− 2	70	72	6.935	96.4
Jan. 22	10:00 P.M.	26	71	45	4.535	100.8
Insulation No. 3b						
Dec. 21	10:30 P.M.	37	70	33	2.985	90.5
Dec. 27	11:30 P.M.	25	70	45	4.720	102.7
Jan. 13	8:30 P.M.	22	70	48	4.850	101.0
Jan. 15	9:30 P.M.	20	72	52	4.775	91.9
Jan. 16	7:30 A.M.	21	71½	50½	4.910	97.4
Jan. 18	11:00 P.M.	− 2	72	74	6.920	93.6
Jan. 22	10:00 P.M.	26	71	45	4.870	108.1
Insulation No. 4a						
Dec. 21	10:30 P.M.	37	70	33	4.135	125.2
Dec. 22	10:30 P.M.	39	70	31	3.415	110.0
Dec. 28	10:00 P.M.	36	70	34	4.425	122.8
Jan. 23	12:00 P.M.	26	73½	47½	4.400	92.6
Feb. 5	12:00 P.M.	31	80	49	6.390	130.3

Table 2—Test Data on Uninsulated Houses

Date	Time	Temperatures Outside	Inside	Diff.	K.W. Input	W/Deg. F.
Uninsulated House No. 8a						
Jan. 7	10:30 P.M.	32½	71	38½	4.850	126.0
Jan. 10	1:00 A.M.	29½	71½	42	6.770	161.0
Jan. 12	1:30 A.M.	23	70	47	6.955	148.0
Jan. 14	1:30 A.M.	18	71½	53½	9.675	180.7
Jan. 16	8:30 P.M.	31	70½	39½	5.625	142.3
Jan. 18	7:30 P.M.	1	70½	69½	10.660	153.5
Jan. 21	11:30 P.M.	16	71	55	6.425	116.8
Uninsulated House No. 8b						
Jan. 14	1:00 A.M.	18	71	53	9.115	172.0
Jan. 16	8:30 P.M.	31	71	40	5.875	146.8
Jan. 18	7:30 P.M.	1	70	69	10.195	147.7
Jan. 21	12:00 P.M.	16	71	55	6.695	123.9
Uninsulated House No. 8c						
Jan. 7	9:00 P.M.	32½	72	39½	6.340	160.4
Jan. 10	1:00 A.M.	29½	72	42½	6.550	154.1
Jan. 12	2:30 A.M.	23	71½	48½	7.255	149.6

Some refrigerator manufacturers guarantee certain working parts for a long time.

. . . And then give that refrigerator an eye-appeal finish that is exceedingly temporary.

You'll pardon us if we keep our eyes on the stock quotations of manufacturers who do a more complete job.

PORCELAIN ENAMEL

PORCELAIN ENAMEL INSTITUTE, INC.
612 NORTH MICHIGAN AVENUE, CHICAGO

MERCHANT & EVANS
USES
SYLPHON BELLOWS
for Crankshaft Seals

Famous for superior engineering, the finest materials and workmanship, reflected in the quiet, highly dependable service of M. & E. refrigeration units—Merchant and Evans naturally selected Sylphon Seamless Metal Bellows for crankshaft seals in these units.

For this seamless, jointless, "miracle in metal" provides the durability of metal while supplying the flexibility of less substantial, out-dated materials.

Time-tested beyond doubt in the products of the leaders in the refrigeration industry, this most highly developed metal diaphragm is the result of over 35 years of constant research and application experience.

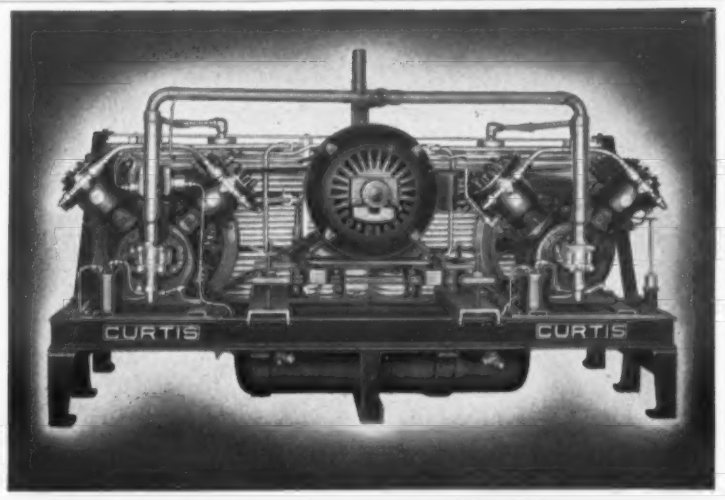
The benefits of this experience are yours for the asking. Write for Bulletin 00-121.

FULTON SYLPHON CO.
KNOXVILLE, TENN., U.S.A.

TIMKEN ROLLER BEARING EQUIPPED

CURTIS

SCORES AGAIN



CURTIS pioneered the "V"-type Timken-roller-bearing equipped, pressure-lubricated refrigeration compressor which, at the time, was an innovation—now a generally adopted design.

Now CURTIS pioneers with a compact 30 Ton Dual Unit incorporating two proven "V"-type compressors driven by one motor.

Dual design permits automatic capacity control for variable air-conditioning loads.

Belt adjustment provided in all directions instead of usual vertical only.

A complete line of units up to 30 Tons.

CURTIS

CURTIS REFRIGERATING MACHINE CO.
Division of Curtis Manufacturing Company
1912 Kienlen Avenue, St. Louis, Missouri

In Canada: Canadian Curtis Refrigeration Company, Ltd., 20 George Street, Hamilton, Ontario, Canada

The Buyer's Guide

Special rates apply to this column only.
Write Advertising Dept. for full information.

DISTRIBUTORS and SALES AGENTS.... WANTED for KOCH COMMERCIAL REFRIGERATOR CABINETS

Some very good territories still available

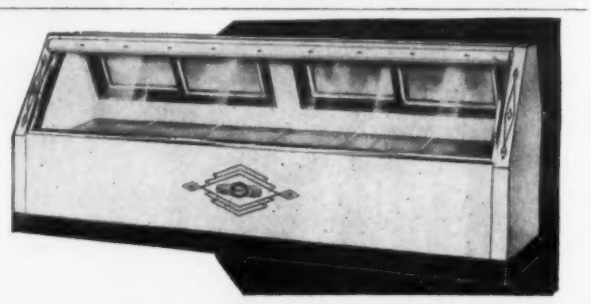
KOCH Display Cases Have 4-in. Corkboard Insulation, Triple Plate Glass, and Are Porcelain Clad

Write for full information, stating qualifications

Complete Market Equipment by KOCH

KOCH REFRIGERATORS
North Kansas City, Mo.

Complete line of Refrigerators, Display Cases, Store Fixtures. Desirable territory available. Write for particulars.



QUALITY THESCO SINCE 1890

THE C. SCHMIDT CO., CINCINNATI

TYLER'S NEW WELDED STEEL REFRIGERATOR CASES

At last a general purpose case at a sensible price. Offers every advantage of the most costly cases at tremendous savings. Modern in every detail. Comes equipped with coils. Single and double duty models.

AN AMAZING VALUE

Hundreds in use. Perfect refrigeration for meat, dairy and delicatessen products and all perishables sold in food stores. Write or wire for all the facts.

TYLER Sales-Fixture CO. Dept. E, Niles, Mich.

3 INCH INSULATION - TRIPLE GLASS

THE IDEAL-30 CU. FT.-REFRIGERATOR!

MODEL No. 350—FOR SMALL RESTAURANTS, LUNCH ROOMS, BARBECUE STANDS, AND WHEREVER LIGHT REFRESHMENTS ARE SERVED

A practical all-metal Cabinet, white DuLux or Porcelain finish—3" insulation—perfectly designed coil bunker—retinned steel shelves—bright chromium hardware.

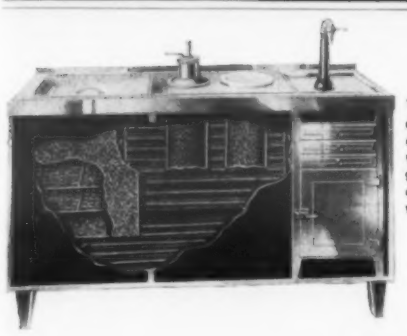
Originally a solid 4-door Cabinet, the two top doors may be transformed to display type if desired, giving a shelf area of 9 sq. ft. Lower compartment, likewise equipped with shelves, has an area of more than 19 sq. ft.

MORE STORAGE SPACE for its size—68"x48"x28"—than any other cabinet—and the price will surprise you.

SOLD ONLY THROUGH DEALERS AND DISTRIBUTORS

WRITE FOR COMPLETE CATALOG

GLOEKLER MANUFACTURING COMPANY 429 FOURTH AVENUE, PITTSBURGH, PA



The 5 Foot Leitner Combination Cooler

This Cooler services drinking water, butter, milk and cream and stores bottles. It is made in a variety of other models and to special layouts. Also available with high back and shelves. Estimates and drawings gladly furnished from rough layouts. Leitner's 30 years of manufacturing leadership back of our co-operation with Dealers and Distributors.

Send for literature on this and "The Leitner System"

M. Leitner & Company
2322 Ogden Avenue
CHICAGO

CASH IN ON FILTERPURE

- Installed in a minute's time in counter cases and reach-in boxes.
- Lowers temperature 8 to 12 degrees.
- Stops sweating.
- No taste transfer. You can place fish next to meat in absolute safety.
- Maintains color and firmness of meats.
- Uniform temperature and humidity.
- Retails for $29.50.

Filterpure is the fastest selling article ever introduced in the refrigeration field. It is the "missing link" to 100% refrigeration. Write today.

BETZ CORPORATION BETZ BUILDING Hammond, Ind.

Commercial Condensing Unit Shipments by 15 Companies Total 28,543 Machines in June

The following report of commercial refrigerating and air-conditioning equipment sales for June, 1936, were made to the Refrigeration Division of the National Electrical Manufacturers Association (Nema) by the following 15 companies:

Brunner Manufacturing Co., Carrier Engineering Corp., Crosley Radio Corp., Frigidaire Corp., General Electric Co., Gibson Electric Refrigeration Corp., Kelvinator Corp., Leonard Refrigerator Co., Merchant & Evans Co., Norge Corp., Servel, Inc., Uniflow Manufacturing Co., Universal Cooler Corp., Westinghouse Electric & Manufacturing Co., and York Ice Machinery Corp.

	SALES FOR JUNE, 1936							
	Domestic		Canadian		Other Foreign		Total	World
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
1. Bottle Water Coolers—Complete	775	$ 58,533	.....	$	33	$ 2,919	808	$ 61,452
2. Pressure Water Coolers—Complete	2,122	225,653	9	1,029	92	10,399	2,223	237,081
3. Water Coolers—Low Side Only	106	6,897	4	160	6	650	116	7,707
4. Ice Cream Cabinets—Complete	3,667	487,586	153	15,287	223	20,596	4,043	523,469
5. Ice Cream Holding Cab. Only (Remote)	884	120,393	27	2,668	22	2,118	933	125,179
6. Bottled Beverage Coolers—Complete	5,455	392,734	214	14,772	141	9,810	5,810	417,316
7. Milk Cooling Cabinets (No High Sides)	228	14,588	.....	.....	56	3,197	284	17,785
8. Air Conditioners—Self-Contained	1,659	342,260	.....	.....	60	13,530	1,719	355,790
9. Air Conditioners—Floor Type (No High Sides)	345	81,631	.....	.....	23	5,998	368	87,629
10. Air Conditioners—Ceiling (Cooling Only—No High Sides)	366	53,577	.....	.....	39	6,640	405	60,217
11. Air Conditioners—Ceiling Type (Equipped for Heating—No High Sides)	60	33,448	.....	.....	5	3,200	65	36,648
12. Air Conditioners—Residential Type (No High Sides, Boilers, or Furnaces)	8	4,394	.....	.....	.....	.....	8	4,394
13. Condensing Units Less Than ½ Hp.	2,840	145,956	58	3,651	458	28,340	3,356	177,947
14. Condensing Units—½ Hp.	2,728	210,716	39	3,226	778	63,132	3,545	277,074
15. Condensing Units—½ Hp.	1,842	176,736	32	3,423	526	45,160	2,400	225,319
16. Condensing Units—¾ Hp.	1,311	157,205	20	2,721	174	23,462	1,505	183,388
17. Condensing Units—1 Hp.	1,022	153,129	24	4,042	154	24,886	1,200	182,057
18. Condensing Units—1½ Hp.	575	110,022	4	801	69	14,103	648	124,926
19. Condensing Units—2 Hp.	279	63,363	4	977	17	4,022	300	68,362
20. Condensing Units—3 Hp.	400	109,624	4	955	39	10,006	443	120,585
21. Condensing Units—5 Hp.	136	61,926	2	675	6	2,790	144	65,391
22. Condensing Units—7½ Hp.	108	57,794	1	644	6	3,244	115	61,682
23. Condensing Units—10 Hp.	86	59,794	.....	.....	26	17,900	112	77,694
24. Condensing Units—15 Hp.	72	61,026	.....	.....	11	8,580	83	69,606
25. Condensing Units—20 Hp.	46	55,087	.....	.....	.....	.....	46	55,087
26. Condensing Units—25 Hp.	43	49,860	.....	.....	.....	.....	43	49,860
27. Total Lines 13 to 26 Inclusive	**11,488**	.....	**188**	.....	**2,264**	.....	**13,940**	.....
28. Total Lines 1, 2, 4, 6, 8, and 27	**25,166**	.....	**564**	.....	**2,813**	.....	**28,543**	.....
29. Commercial Evaporators (Not Reported Above)	4,980	143,210	285	7,968	1,293	37,953	6,558	189,131
30. Air-Conditioning Evaporators (Not Reported Above)	386	53,488	2	270	7	3,671	395	57,429
31. Total Commercial & Air Conditioning	.....	**$3,490,630**	.....	**$63,269**	.....	**$366,306**	.....	**$3,920,205**

Franklin Markets Line Of Service Equipment

NEW YORK CITY—Franklin Machine Products Co., Inc., of this city has entered the refrigeration accessories field with a new line of special refrigeration items for service men.

The illustration above shows the Franklin charging kit for service men. The outfit consists of a light weight charging connection (which is also sold separately), two flexible charging hose, 2-inch or 2½-inch compound and high pressure gauges, and a special slip-handle valve-stem wrench which fits the two valves on the charging connection and also the valve on the refrigerant drum.

These parts are all assembled into a compact metal box that protects the charging lines, gauges, and charging connection from damage and dirt.

The charging connection is of new design, and weighs 8 ounces. It has a special connection for charging oil or refrigerant into the system, and is featured by the valve stems being sealed against packing gland leaks except when the charging opening is being used.

Earnings

General Electric Co.

SCHENECTADY — Orders received by General Electric Co. for the second quarter of 1936 amounted to $77,398,718, compared with $55,163,014 for the second quarter of 1935, an increase of 40%, President Gerard Swope announced last week.

In the first quarter, the increase was 21%. The second quarter of 1936 was the best since the second quarter of 1931.

Orders received for six months amounted to $136,968,597, compared with $104,542,946 for the first six months last year, an increase of 31%.

Sales billed during the first six months of 1936 amounted to $119,273,388, compared with $94,546,274 during the corresponding period last year, an increase of 26%.

Profit available for dividends on the common stock for the first six months of this year was $16,592,324, compared with $11,541,429 for the first six months of last year. This profit is equivalent to 58 cents a share, compared with 40 cents a share for the first half of 1935.

Parker Rust-Proof Co.

DETROIT—Parker Rust-Proof Co. and subsidiaries report for the quarter ended June 30, 1936, a net income of $283,812 after depreciation, federal income taxes and other charges, against $250,393 in the preceding quarter.

June quarter net is equal, after allowing for preferred dividends, to 66 cents a share on 429,498 shares (par $2.50) of common stock. No mention was made of any provision for federal surtaxes on undistributed profits.

In the preceding quarter net income was $250,393, equal after preferred dividends to 58 cents a common share. For the six months ended June 30, last indicated net income was $534,205, equal to $1.29 a common share.

235,853 Household Electric Refrigerators Are Sold to Distributors in June By 15 Manufacturers

The following 15 member companies of the Refrigeration Division of the National Electrical Manufacturers Association (Nema) reported household refrigerator sales for June, 1936: Apex Electrical Mfg. Co., Crosley Radio Corp., Fairbanks, Morse & Co., Frigidaire Corp., General Electric Co., Gibson Electric Refrigeration Co., Kelvinator Corp., Leonard Refrigerator Co., Norge Corp., Servel, Inc. (export only), Stewart-Warner Corp., Sunbeam Electric Mfg. Co., Uniflow Mfg. Co., Universal Cooler Corp., and Westinghouse Electric & Mfg. Co. Member companies not reporting included: Jomoco, Inc., Merchant & Evans Co., and Sparks-Withington Co.

The sales of the reporting companies do, however, include units manufactured for the following concerns: Major Appliance Corp., Montgomery Ward & Co., Potter Refrigerator Corp., and Sears, Roebuck & Co.

	SALES FOR JUNE, 1936					
Lacquer (Exterior) Cabinets Complete	Domestic		Canadian		Other Foreign	
	Quantity	Value	Quantity	Value	Quantity	Value
1. Chest	2,918	$ 140,658	29	$ 1,410	192	$ 9,821
2. Less than 3 cu. ft.	58	3,512	.....	.....	1	50
3. 3 to 3.99 cu. ft.	5,647	324,435	150	8,498	3,188	185,175
4. 4 to 4.99 cu. ft.	31,650	2,056,488	1,440	94,601	4,853	322,147
5. 5 to 5.99 cu. ft.	59,394	4,495,623	1,232	98,369	2,270	178,176
6. 6 to 6.99 cu. ft.	63,383	5,091,671	334	28,644	1,377	121,136
7. 7 to 7.99 cu. ft.	14,762	1,544,066	286	32,726	575	60,153
8. 8 to 9.99 cu. ft.	1,671	167,289	4	414	124	15,309
9. 10 to 12.99 cu. ft.	57	10,484	1	142	46	8,237
10. 13 cu. ft. and up	16	3,292	.....	.....	.....	.....
11. Total Lacquer	**179,556**	**13,837,518**	**3,476**	**264,804**	**12,626**	**900,204**
Porcelain (Exterior) Cabinets Complete						
12. Up to 4.99 cu. ft.	1,833	136,108	87	6,956	132	10,687
13. 5 to 5.99 cu. ft.	7,442	631,146	90	7,824	382	33,496
14. 6 to 6.99 cu. ft.	13,956	1,308,814	43	4,178	191	18,811
15. 7 to 7.99 cu. ft.	5,823	647,714	22	2,471	185	22,049
16. 8 to 9.99 cu. ft.	2,874	371,951	15	1,824	105	14,840
17. 10 to 12.99 cu. ft.	615	103,335	2	390	70	10,781
18. 13 cu. ft. and up	460	109,601	2	447	59	14,287
19. Total Porcelain	**33,003**	**3,308,669**	**261**	**24,090**	**1,124**	**124,951**
20. Total—Lines 11 and 19	**212,559**	**17,146,187**	**3,737**	**288,894**	**13,750**	**1,025,155**
21. Separate Systems ¼ Hp. or Less	3,114	108,003	.....	.....	2,277	85,722
22. Separate Household Evaporators	335	6,998	11	324	70	6,253
23. Total—Lines 20, 21, 22	**216,008**	.....	**3,748**	.....	**16,097**	.....
24. Condensing Units ¼ Hp. or Less	722	45,493	49	2,876	411	25,750
25. Cabinets—No Systems	454	16,332	.....	.....	151	4,332
26. Total Household	.....	**$17,323,013**	.....	**$292,094**	.....	**$1,147,212**

LOW ACIDITY • • LOW MOISTURE

Artic
REG. U.S. PAT. OFF.
(DU PONT METHYL CHLORIDE)
for SERVICE WORK

DU PONT DU PONT

For recharging methyl systems, use only ARTIC—du Pont's special refrigeration grade of Methyl Chloride. Produced under strict chemical control and PRE-TESTED before shipping. Low moisture and acidity, high purity are guaranteed.

Authorized ARTIC distributors at strategic points carry adequate stocks of ARTIC in standard containers. Prompt shipment can be made to all parts of the country.

Service Men: Send for our Free book, "ARTIC Service Manual"—32 pages of useful information on handling, servicing, leak detection and testing, etc. Let us put you on our mailing list to get "ARTIC Service News"—the timely news bulletin for refrigeration men.

THE R. & H. CHEMICALS DEPT.
E. I. DU PONT DE NEMOURS & CO., INC., Wilmington, Del.
District Sales Offices: Baltimore, Boston, Charlotte, Chicago, Cleveland, Kansas City, Newark, New York, Philadelphia, Pittsburgh, San Francisco

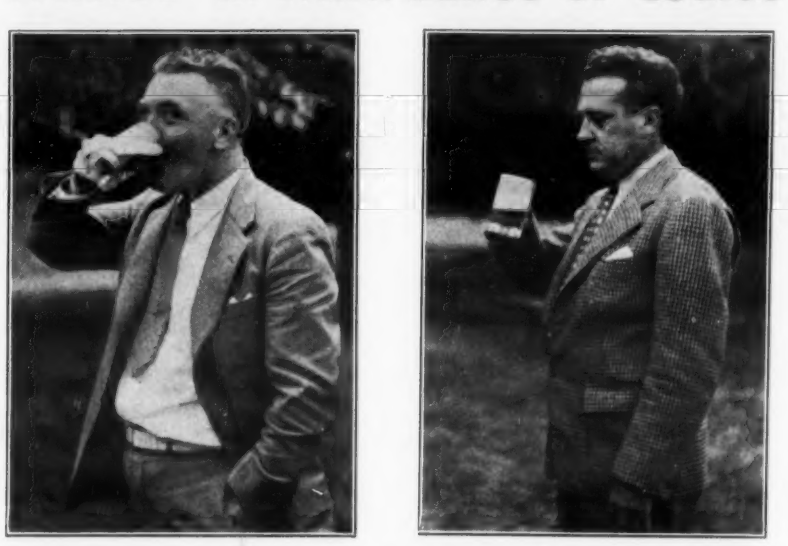
Franklin G. Slagel Co. Opens New Refrigeration Headquarters on the West Coast

Just opened in Los Angeles is the new headquarters of the Franklin G. Slagel Co., manufacturers' agent for refrigeration and air-conditioning equipment, parts and supplies, serving the West Coast and Rocky Mountain territories. Mr. Slagel believes his establishment to be one of the largest of its kind in the country. At the left is a section of the stock room. Shown in the center is part of the display rooms, with Fedders cooling equipment and a Brunner compressor dominating this particular display. Along the top of the showroom windows are listed the names of the firms which Mr. Slagel's company represents. At the right is Mr. Slagel in his private office.

The Debutantes

The "Three Debutantes" (Dorothy Compton, Betty Noyes, and Marjorie Briggs) trio with Ted Fio Rito's orchestra on the "Frigidaire Frolic" radio program, raid a Frigidaire.

Where?—in Milwaukee of Course



These pictures were snapped by Gus Marx, head of the advertising agency which bears his name, at a recent meeting of the Milwaukee Electric Refrigeration Bureau. Frank Greusel (right), distributor and manager of the bureau, says his sober attitude is "caused by the weight of a distributor's problems, while Dealer Elmer Stocker (at the left) with his 40% profit can relax and thoroughly enjoy the occasion."

Another Ranger

Soon there'll be more "Texas Rangers" than honorary Kentucky Colonels. W. Paul Jones (left) of Fairbanks-Morse gets his credentials from J. F. Marquitz of the Dallas branch.

Day's Catch

Campbell Wood, director of public utility sales for Kelvinator, just after gaffing a nice one on a fishing expedition off the Florida coast. That's anti-sunburn stuff covering his visage.

Stewart-Warner Dealers Gather in Chicago to See New Line of Radios

Stewart-Warner distributors gathered from all corners of the country for the recent convention at the factory. (1) John Ditzell, S-W radio and refrigerator sales manager, finds A. Marquardt of Boston and G. Wood of Hartford, Conn., in a happy frame of mind. (2) They direct S-W radio sales in the New York territory. Morty, Harry, and Sam Salzman, with Eddie Rutledge, district manager. (3) One of the largest distributor delegations was this group from Morley Bros. of Saginaw, Mich., who handle S-W radios and refrigerators in the principal Michigan cities. (4) L. C. Wiswell, head of the L. C. Wiswell Co., newly appointed S-W radio distributor, with other executives from his company.

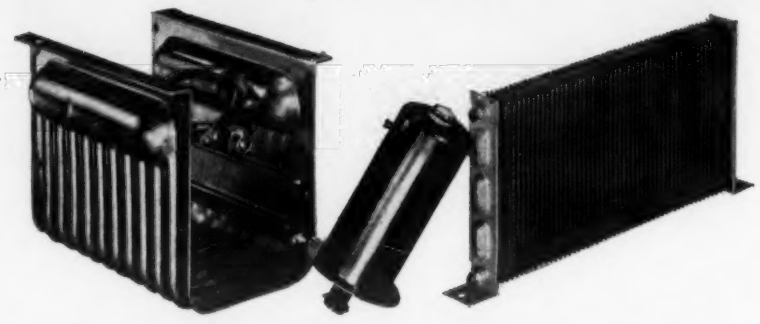
Avon Corp, Corozone Distributor, Uses the Product It Sells in Its 'Sales Salon'

The three pictures in the set above are of what officials of Corozone Air Conditioning Corp. believe to be the first institution in the country devoted exclusively to the sale of portable air conditioners. It is operated by the Avon Corp., Philadelphia distributor for Corozone. Seated at the desk in the picture at the left is W. W. Von Seldeneck, president of the distributing firm. Center photograph shows the exterior and display window. At the right is the impressive and comfortable showroom, with a salesman making a demonstration of a unit conditioner.

The Buyer's Guide

Suppliers Specializing in Service to the Refrigeration and Air Conditioning Industries

SUPPLYING THE REFRIGERATION INDUSTRY



Evaporators, Receivers, Condensers, Compressor Domes, Compressors and Mechanical Parts. Also "Houdize," a perfected process for permanently uniting ferrous or non-ferrous metals.

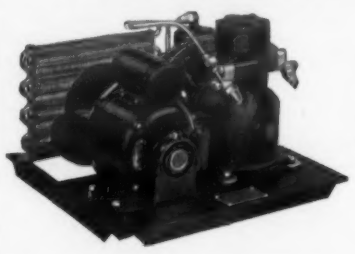
OAKES PRODUCTS CORP. North Chicago and Decatur, Ill. **HOUDE ENGINEERING CORP.** Buffalo, New York

DIVISIONS OF HOUDAILLE-HERSHEY CORPORATION

General Executive Offices: Detroit, Mich.

CONDENSING UNITS and COMPRESSORS

FOR HOUSEHOLD REFRIGERATION BY



JOMOCO, INC.
A SUBSIDIARY OF THE
JOHNSON MOTOR CO.
Waukegan, Ill.
CABLE ADDRESS: JOMOCO-WAUKEGAN

MILLS
COMPRESSORS
for Commercial Use

Mills Novelty Company • 4100 Fullerton Avenue • Chicago, Illinois

Model No. 500-A

"CHIEFTAIN",
QUALITY-BUILT COMPRESSORS and CONDENSING UNITS

All bearings diamond bored. Positive lubrication of piston by newly developed process plus forced feed lubrication in all models.

Sizes: 1/6, 1/5, 1/4, 1/3 h.p.
Write for prices

TECUMSEH PRODUCTS CO.
Tecumseh, Mich.

OFFICES
New York 480 Lexington Ave.
Chicago 828 N. Wells St.
Detroit Export Department 1002 Palms Bldg.
Los Angeles 122 Mariposa St.
St. Louis 577 Arcade Bldg.
Dallas 215 S. Pearl St.

REMPE
FIN COILS
for Commercial Use

Rempe Co. • 340 N. Sacramento Blvd. • Chicago, Illinois

ROTARY SEAL REPLACEMENT UNITS
FOR REFRIGERATOR COMPRESSORS

Rotary Seal Replacement Unit Installed in a compressor

- QUICKLY AND EASILY INSTALLED
- SAVE TIME AND TROUBLE
- PREVENT SHAFT LEAKS

With the many acknowledged advantages, ROTARY SEAL UNITS are unquestionably the most perfect replacement seal units available.

STRONG, ECONOMICAL, SILENT
GUARANTEED TO GIVE PERFECT SATISFACTION

ROTARY SEAL COMPANY
801 W. Madison St. Chicago, Ill.

Questions

Percentage Leaders Sell

No. 2858 (Manufacturer, Ohio)—"What percentage of total sales of domestic refrigerators are obtained by six or eight leading manufacturers?"

Answer: No such estimates are available. If such manufacturers as Frigidaire, Kelvinator and General Electric would agree to give us monthly household sales figures for publication we could soon get all the others or make a good guess as to their rank. Without official figures from leaders we cannot make accurate estimates.

Milk Cooling Data

No. 2859 (Manufacturer, Pennsylvania)—"Do you have any data on cooling milk?

"I am very anxious to get all the information I can on this subject, also information regarding the mechanical side of this subject."

Answer: A very exhaustive study covering all phases of milk cooling was published in the May 8, 1935 issue of ELECTRIC REFRIGERATION NEWS. Other pertinent information on this subject was published in the July 4, 1934 issue of the NEWS.

Motorfrigerator Co.

No. 2860 (Engineer, New York)—"Will you please give me any information which you might have on the Motorfrigerator Company.

"I would like to know where this company did business, and the type of products manufactured; also, under what state they were incorporated, and, if they are not now in business, the name of their successors."

Answer: The last information we had about this company was published in the September 5, 1934 issue of ELECTRIC REFRIGERATION NEWS in which we reviewed the corporate history of the companies who had been active in the industry. It reads as follows—

"Motorfrigerator Co.
Present address: Landsdale, Pa.
Chartered in Pennsylvania.
Officers (1934): James M. C. Speirs, pres.; Irwin Pool, treas.; and LeRoy Wismer, secy. Speirs is engaged in the hardware business in Landsdale, Pa. Pool is in the clothing contracting business under the name Pool & Son, and president of Landsdale Building and Loan Association, Landsdale Thrift Bank and a director of the Landsdale National Bank. Wismer is a member of the firm of Wismer and Crouthamel Machine Shop.

"The Motorfrigerator used ¾ lbs. of ethyl chloride in a double-acting, reciprocating, horizontal type compressor with a 3-in. bore and a ½-in. stroke. Brine tank, air-cooled condenser, ⅛-hp. motor.

"When recently interviewed I. Pool said company had done nothing since that time, although corporation remains intact."

Cost Accounting Systems

No. 2861 (Air Conditioning Dealer, Alabama)—"In your 1935 REFRIGERATION AND AIR CONDITIONING MARKET DATA BOOK you refer to the necessity for uniform cost accounting (see page 20, top of second column). Can you give me references to such published information as is available showing what practices have been adopted by successful distributors of refrigerating and air conditioning equipment?"

Answers We do not know of any published information on this subject. However, we will make an effort to find what has been done concerning this matter.

In one or two communities where the air-conditioning distributors and dealers are organized, some efforts have been made to keep the bids in line by attempting a uniform "bid" or prospectus form. One such form which was used in Kansas City was published in the February 26, 1936 issue of ELECTRIC REFRIGERATION NEWS.

Market for Reach-In Boxes

No. 2862 (Advertising Agency, New York)—"If you happen to have in your files any information concerning the selling and marketing of reach-in kitchen type refrigerators of the style used by restaurants, hospitals, hotels and others requiring a box similar in nature to a domestic box but larger in size, I would very much appreciate receiving that information if it is available to an advertising agency such as ourselves.

"I am particularly anxious to know, if possible, what percentage of these boxes are sold upon specification by architects; what percentage are sold through refrigerating machine dealers; what percentage direct by the box manufacturers' salesmen, etc.

"Have you any data concerning the total size of the market, i.e., volume sold?"

Answer: Commercial sales figures were published by the Commercial Refrigerator Manufacturers Association earlier in the year. According to these figures, sales in the "commercial refrigerator" classification (which we understand includes the reach-in type refrigerator) total 4,010 units. This may give some idea of the size of the market.

It is impossible to give any sort of a definite figure on how these reach-in refrigerators were sold. However, from personal observations and study our guess would be that about 50% of the sales were made by refrigeration and fixture dealers, and that the other 50% were sold through some other channels. In the case of the large complete jobs, especially for new hotels and hospitals, etc., we would say that a great percetage of such installations are sold upon specification by the architect.

Wayne Refrigerators

No. 2863 (Dealer, Kentucky)—"We would very much appreciate your informing us as to who the makers of Wayne refrigerators are, and where we will be able to contact them."

Answer: Wayne refrigerators were made by the Wayne Home Equipment Co., 102 Glasgow St., Fort Wayne, Ind. This company is now known as the Wayne Oil Burner Corp.

Some years ago the Wayne company sold out the refrigerator part of its business to Apex Electric Mfg. Co., 1070 E. 152nd St., Cleveland, Ohio. We would suggest that you contact one or both of these firms regarding any problem about Wayne units.

Patents on Foot Pedals

No. 2864 (Attorneys, Missouri)—"Will you kindly forward us the back issue of your publication showing diagrams and patents on latches for refrigerators, especially foot pedal openings.

"We would also appreciate any information you might furnish with reference to such pedal latches on various models with reference to the patents, as we have a client who has a patent and who wants to get in touch with the various companies with reference thereto."

Answer: While it is true we do publish a digest of refrigeration patents, we do not keep an index of them, so that it is impossible to give you a reference on the patent number for any *type* of product.

It might be possible to get such information from the Leonard Refrigerator Co., 14260 Plymouth Rd., Detroit, Mich., or the General Electric Co., Refrigeration Dept., Nela Park, Cleveland, Ohio. These two firms are the principal users of foot pedal door openers.

Parts Makers

No. 2865 (Dealer, Pennsylvania)—"We understand that you will be able to supply us with names of firms from whom we can purchase parts for electrical refrigerators."

Answer: Leading manufacturers of parts for electric refrigerators advertise in the weekly issues of ELECTRIC REFRIGERATION NEWS.

Classified

RATES: Fifty words or less, one insertion, $2.00, additional words four cents each. Three insertions $5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Electric Refrigeration News, 5229 Cass Ave., Detroit, Mich.

POSITIONS AVAILABLE

WANTED—SALES ENGINEER. Prominent manufacturer of one of leading lines seeks engineer or experienced service department executive to sell controls, valves and small equipment accepted as standard and acknowledged by all refrigeration manufacturers to be a quality line. Contact principally with supplies jobbers, distributors and leading service organizations. Application must have complete information as to education and experience, preferably with photograph. Good salary and permanent position for right man with sales ability. Replies held confidential. Applications or photo returned if requested. Box No. 815, Electric Refrigeration News.

WANTED—Sales Manager, experienced, household electric refrigerators. State experience. Applications confidential. Box 816, Electric Refrigeration News.

WANTED—Sales Promotion Manager, domestic electric refrigerators. Box 817, Electric Refrigeration News.

WANTED — EVAPORATOR ENGINEER. Large well-known manufacturer has an opening for an engineer on sheet metal evaporator design. Must know how to design such evaporators and must be conversant with its production. Consideration will be given only to men with such experience. Box 819, Electric Refrigeration News.

EQUIPMENT FOR SALE

FRIGIDAIRE plain T two temperature valves $2.50. Mercoid No. 848 controls complete with tube $5.00. Try Warrenol for stuck-up compressors. Samples available. Thermostats, float valves, and expansion valves rebuilt. Prompt service. Same day shipment on refrigerant gases. HALECTRIC LABORATORY, 1793 Lakeview Road, Cleveland, Ohio.

FOR SALE 9 Brunner refrigeration compressors, "V" type—Model R-5000—4 cylinder—3¼" bore and 2¼" stroke—less drive pulley. These compressors are practically new—used only for display purposes. Priced right for quick sale. Box 810, Electric Refrigeration News.

FOR SALE. Brand new methyl compressors, both single and twin cylinder, for domestic and commercial jobs up to 25 cubic feet. Also condensers, expansion valves, fittings, ⅛, ¼, and ⅓ h.p. General Electric capacitor motors, Bristol recording instruments, etc. All new merchandise, attractively priced for quick disposal. Box 811, Electric Refrigeration News.

DEALERS, SERVICEMEN. Used refrigerators "As Is." Recondition, spray them yourself. Frigidaires $17.00 up, Kelvinators $12.00 up, Electrolux $25.00 up; also Copelands, Majestics, Servels, Ice-O-Matics & others. Frigidaire units $15.00 up; C 1 h.p. $75.00; Mayflower 1 h.p. unit $65.00; ⅛ motors $4.50. PILGRIM REFRIGERATION CO., 43-47 39th Place, Long Island City, N. Y.

REPAIR SERVICE

SAVE MONEY on electric motor repairs. We rebuild and rewind thousands of motors yearly for largest refrigeration firms in the East and can save you money on your motor problems. Write for our price schedule for rewinding or rebuilding motors for refrigeration, oil burners, washing machines, motor stokers, and air condition motors. Out of town motors are picked up and delivered by our motor transportation service. Write for our dealers' price list. P. J. QUINN'S SONS, INC., 166 Vernon Ave., Long Island City, N. Y.

MAJESTIC UNITS; any model, rebuilt or exchanged $20.00 f.o.b. Chicago. Guarantee six months. All models in stock for prompt exchange. Wholesale only. REFRIGERATION PRODUCTS, INC., 122 W. Illinois St., Chicago, Ill.

GENERAL ELECTRIC sealed units repaired, exchanged. Work guaranteed. Majestic units rebuilt, exchanged, $20.00. Satisfied customers in all parts of the United States. Give model when writing. REFRIGERATOR ENGINEERING PARTS & SERVICE CO., 2800 So. Parkway, Chicago, Ill.

REFRIGERATION CONTROLS, domestic types, repaired. 48 hours. Ranco pencil types $1.75, all box types, $2.00. Majestic $2.50. UNITED GAUGE AND INSTRUMENT COMPANY, 436 West 57th Street, New York City.

MAJESTIC
Refrigerator Service Manuals

Special to refrigeration service men and dealers, a limited supply of the latest official Majestic service and instruction manuals.

Manual on Hermetically Sealed Units
Manual on Standard Units
Both Books for $1.50 plus postage
While quantity lasts.

I. N. KOENIG
2636 Logan Blvd., Chicago

Service Methods

Control of Refrigerant in Surface Cooling Systems

By D. D. Wile,* Chief Engineer
Refrigeration and Air Conditioning, Detroit Lubricator Co.

MUCH progress has been made during recent years in the control of refrigerant flow to surface coolers. This is especially true of systems employing the low pressure refrigerants such as Freon, methyl chloride, and sulphur dioxide. This progress has been a result of (1) improvement in the thermostatic expansion valves which are universally used to regulate the flow of refrigerant in these systems and (2) the development of suitable distributing headers in the case of large evaporators employing many tubes connected in multiple and supplied from one expansion valve.

In this paper it is intended first to discuss the operation of the thermostatic expansion valve, and then describe the method used by several manufacturers in proper distribution of refrigerant to the evaporator.

Thermostatic Expansion Valve

Fig. 1 shows the construction of a conventional thermostatic expansion valve used on capacities up to 3½ tons Freon or 6 tons methyl chloride. This valve consists in effect of two parts. First the body proper, and second the thermostatic power element.

The bellows "K" attached to the body responds to the pressure in the evaporator and tends to close the needle on increasing pressure, which occurs when the compressor stops, and to open the needle when the pressure is lowered by the starting of the compressor.

Makeup of Power Element

The thermostatic power element consists of a bellows connected by means of a capillary tube to a feeler bulb. Since this feeler bulb is charged with refrigerant the pressure exerted on the bellows will correspond to the temperature at the feeler bulb. The thermostatic bellows presses against a push rod "V" and tends to open the needle on increasing temperature of the feeler bulb.

In operation the feeler bulb is clamped to the suction line leaving the evaporator and tends to modulate the opening of the needle so as to admit just the proper amount of refrigerant to keep the coil entirely refrigerated. This operation is necessary in order to obtain maximum efficiency from the coil and yet prevent liquid refrigerant from passing back to the compressor through the suction line.

By making the thermostatic bellows slightly smaller in area than the body bellows, this valve is made to control a constant superheat of the gas leaving the evaporator.

It has been found by practical experience that the large majority of evaporators either for low temperature work or air-conditioning service operate satisfactorily at approximately 10° superheat.

Eliminates Setting in Field

When a valve is adjusted for 10° superheat it is seldom necessary to change this adjustment regardless of whether the valve is applied to high temperature or low temperature applications. This condition has made it possible to adjust the valve at the factory and thus eliminate much inconvenience in the field.

An adjustment is provided on the valve, however, in order to make it possible to balance the system to its point of highest efficiency. This adjustment is accomplished by simply turning the nut "C," Fig. 1.

Since it was found that the thermostatic expansion valve shown in Fig. 1 could be adjusted at the factory, and seldom needed adjustment in the field, it was natural to give thought to a type of construction which would eliminate the adjustment entirely, and thus make it impossible to throw the valve out of adjustment after it had been properly set at the factory.

Seal Adjustment on Valve

Fig. 2 shows a non-adjustable type of expansion valve which operates on the same principle as the valve shown in Fig. 1, but has its adjustment sealed up on the inside so that after being properly set at the factory it cannot be altered in the field. This valve maintains a constant superheat and has wide use in air conditioning, commercial, and low temperature applications.

A very recent improvement in thermostatic expansion valves has been the adoption of a gas charge in the thermostatic power element in place of the previous liquid charge. This development consists in charging the power element with refrigerant in the gaseous state at a specified pressure and temperature. If then the feeler bulb is heated there will be only a very slight increase in pressure in the power element due to the expansion of the gas. Upon cooling the feeler bulb down there will likewise be only a small change in pressure until the saturation point is reached. Then the refrigerant will start to condense into liquid and the pressure will be in accordance with the vapor pressure instead of the gas pressure.

To Determine Transition Power

By controlling the pressure at which the thermostatic power element is initially charged, it is possible to determine the pressure at which the transition from gas to liquid occurs. The valves are charged so that during normal operation liquid is present in the feeler bulb and insures that a constant superheat will always be maintained.

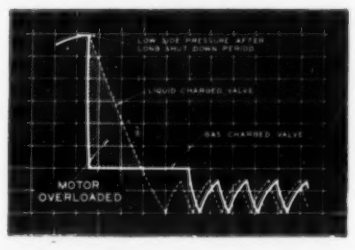
If then the unit is turned off and allowed to warm up the pressure in the evaporator will increase continuously in accordance with the vapor pressure of the refrigerant. The pressure in the power element of the expansion valve will, however, increase only to the predetermined pressure, at which point all of the liquid in the power element will be vaporized into a gas and then there will be no substantial increase beyond this point.

Eliminates Motor Overload

This insures that the valve remains tightly closed until the low-side pressure has been reduced to the predetermined point.

This eliminates overload on the motor during the pull-down period and yet permits the coil to work at maximum efficiency during normal operation. The characteristic pull-down operation of a system employing the gas charged valve and the usual liquid charged valve is shown in Fig. 3.

Figure 3



It will be noted that the gas charged valve allows the system to quickly pull down to a moderate pressure, thus protecting the motor against overload. After the initial pull-down period it will be noted that the operation of the gas charged valve is exactly the same as the liquid charged valve.

The pressure at which the gas is charged, or the so-called maximum operating pressure, is always selected slightly above the normal cut-in point of the system. For commercial applications and small air-conditioning units the maximum operating pressure generally specified is 55 lbs. for Freon, 40 lbs. for methyl chloride, and 20 lbs. for sulphur dioxide.

Maximum Operating Pressures

For low temperature applications such as ice cream storage cabinets where it is decided to obtain the greatest possible protection for the motor, the maximum operating pressures generally specified are 15 lbs. for Freon, 10 lbs. for methyl chloride and 0 lbs. for sulphur dioxide.

Use of the gas charged valve makes it unnecessary to throttle the suction valve when starting up the ice cream cabinet. In the past this has been generally necessary in order to prevent overloading the motor, and has involved considerable inconvenience. The gas charged valve accomplishes the necessary throttling automatically during the pull-down period.

Large Capacity Valve

Fig. 4 shows the cross section of a large capacity thermostatic expansion valve employing the same principles of operation as the valve shown in Fig. 1. This valve has been developed for various capacities up to 20 tons Freon and 35 tons methyl chloride. It is designed to maintain a constant degree of superheat in the suction gas and is adjusted at the factory to maintain maximum coil efficiency.

Although an adjustment is provided as shown at "Q" it is seldom necessary to change the factory setting. The valve is also gas charged so as to protect the motor against overload when starting up a warm system or when operating conditions become abnormally heavy.

In large capacity coils there is oftentimes a large drop in pressure between the inlet and the outlet and

(Concluded on Page 34, Column 3)

*Paper presented at the World Congress of Refrigeration at The Hague, Holland.

Figure 1

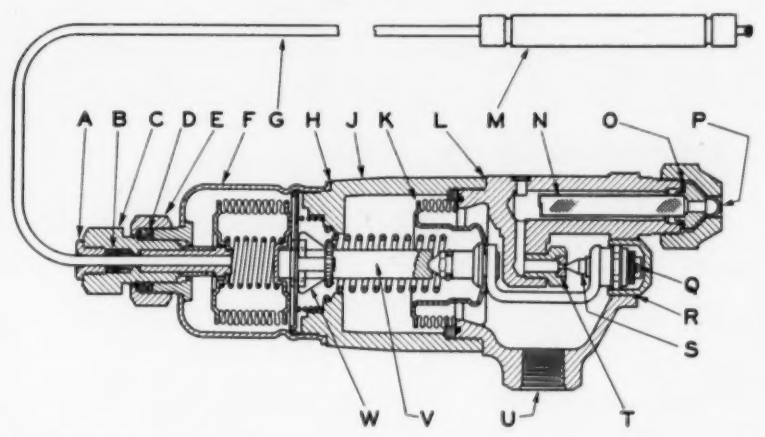


Fig. 1 is a cross-section drawing of a standard Detroit thermostatic expansion valve for use on capacities up to 3½ tons of Freon and 6 tons of methyl chloride. The key is given below.

Figure 2

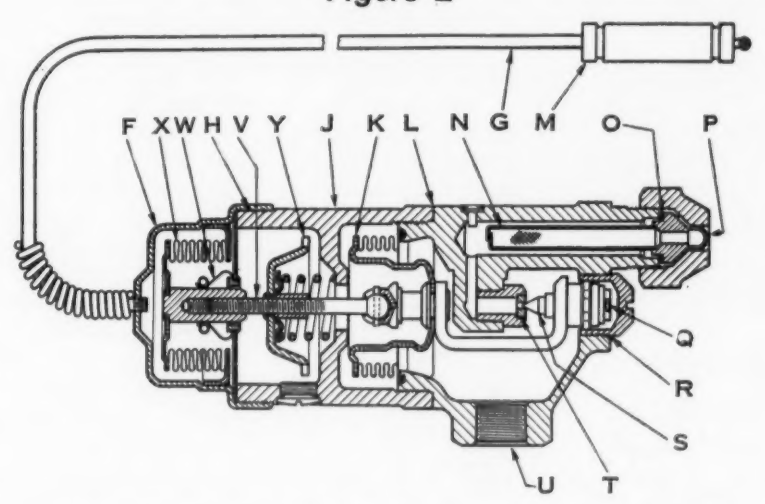


Fig. 2 demonstrates a non-adjustable thermostatic expansion valve which operates on same principle as one shown in Fig. 1. The key for both is:

A—Packing nut
B—Spring loaded packing around capillary tube
C—Adjusting nut
D—Packing around adjusting screw
E—Packing nut
F—Power element
G—Capillary tube
H—Sealed joint
J—Bakelite extension
K—Body bellows
L—Sealed joint
M—Feeler bulb
N—Inlet strainer
O—Strainer gasket
P—Inlet connection
Q—Needle Swivel
R—Plug hermetically Sealed
S—Delubaloy needle
T—Delubaloy seat
U—Outlet connection
V—Push rod
W—Anti-chatter device
X—Power element bellows
Y—Factory adjustment (674)

Frigidaire's
LEAK DETECTOR

New Improvements
Greater Efficiency
Absolute Dependability

...at a New Low Price

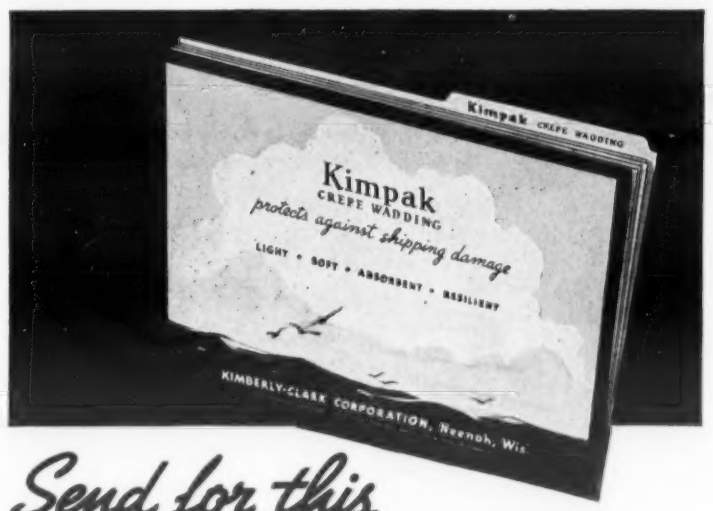
● Here is a new Leak Detector for F-12* that offers outstanding improvements. Simplified construction, compact, economical and dependable. A positive detector for even the smallest leaks. One filling of Frigidaire special fuel lasts from 45 minutes to an hour. All parts are replaceable. Light and sturdy.

*Also can be used to detect leaks of Methyl Chloride.

This Frigidaire Leak Detector is an indispensable tool for service men. Easy to operate. Complete instructions with every detector. And the price is amazingly low. It will pay you to get full details. See your nearest Frigidaire Distributor or write Frigidaire Corporation, Dept. ERN-75, Dayton, Ohio.

GENUINE FRIGIDAIRE PRECISION-BUILT PARTS

USE GENUINE FRIGIDAIRE PRECISION-BUILT PARTS



Send for this
FREE 1936 ILLUSTRATED PORTFOLIO OF
Kimpak
REG. U.S. PAT. OFF. & FOREIGN COUNTRIES
CREPE WADDING

Learn how hundreds of foremost manufacturers use economical KIMPAK to guard products against all kinds of shipping damage

● KIMPAK is a soft, resilient crepe wadding that comes in rolls, sheets, and pads of various thicknesses. It is free of dirt, grit or other foreign substances. KIMPAK protects fine finishes, minimizes breakage during shipment. It gets your product to your customers in perfect condition.

Because it is easily applied, KIMPAK saves time, labor and money in packing or package protection.... Send today for your copy of the new "1936 Portfolio." Please make request on your letterhead, and address nearest office.

KIMBERLY-CLARK CORPORATION
NEENAH, WIS.
8 S. Michigan Ave., Chicago 122 E. 42nd St., New York City 510 W. 6th St., Los Angeles

LIGHT AS A FEATHER SOFT AS WOOL ABSORBS LIKE A SPONGE GIVES LIKE A SPRING

Refrigeration Jobbers

who can supply single copies (current or back issues) or take your subscription order for Electric Refrigeration News

Refrigeration Supply Co.
100 Washington St.
Brookline, Mass.

Home Oil Burner Corp.
236 Main St.
Hempstead, L. I., N. Y.

Aetna Supply Co.
407 E. 152nd St.
New York, N. Y.

Harry Alter Co.
161 Grand St.
New York, N. Y.

Federal Refrigerator Corp.
57 E. 25th St.
New York, N. Y.

Victor Sales Corp.
2222 Arch St.
Philadelphia, Pa.

Melchior, Armstrong, Dessau Co., Inc.
400 E. Lombard St.
Baltimore, Md.

Wm. M. Orr Co.
1228 Brighton Rd.
Pittsburgh, Pa.

Radio Service Co.
50 Hazle St.
Wilkes Barre, Pa.

Henry V. Dick & Co.
514 Oates St.
Charlotte, N. C.

Debes & Co.
1249 E. 105th St.
Cleveland, Ohio

Harry Alter Co.
4506 Prospect Ave.
Cleveland, Ohio

W. C. Du Comb
6335 Palmer Ave., East
Detroit, Mich.

J. M. Oberc, Inc.
904 W. Baltimore
Detroit, Mich.

W-M Refrigeration Co.
2468 N. Third St.
Milwaukee, Wis.

Airo Supply Co.
410 N. Wells St.
Chicago, Ill.

H. Channon Co.
133 N. Wacker Dr.
Chicago, Ill.

Harry Alter Co.
1728 S. Michigan Ave.
5217 W. Madison St.
4611 N. Western Ave.
7821 Stony Island Ave.
Chicago, Ill.

Harry Alter Co.
2315 Washington
St. Louis, Mo.

The Spangler Co., Inc.
3331 Market St.
St. Louis, Mo.

The Spangler Co., Inc.
623 St. Charles Ave.
New Orleans, La.

Refrigeration & Industrial Supply
422 S. Seventh St.
Minneapolis, Minn.

Thermal Service Co.
2490 University Ave.
St. Paul, Minn.

Hieb Distributing Co.
905 Walnut St.
Des Moines, Iowa

C. L. Percival Co.
11th & Cherry Sts.
Des Moines, Iowa

Burstein-Applebee Co.
1012 McGee St.
Kansas City, Mo.

United Supply Co.
207 N. 16th St.
Omaha, Nebr.

Refrigeration Service, Inc.
3109 Beverly Blvd.
Los Angeles, Calig.

Refrigeration Supplies Distributor
222 N. Vermont Ave.
Los Angeles, Calif.

California Refrigerator Co.
1077 Mission St.
San Francisco, Calif.

F. C. Lovelock, Ltd.
235 Clarence St.
Sydney, N.S.W., Australia

J. Russell Hancock, Ltd.
27 Courtney Place
Auckland, New Zealand

Ahmed A. Fazelbhoy
New Queen's Road
Bombay, India

Ahmed A. Fazelbhoy
55 Canning St.
Calcutta, India

PARTS-SUPPLIES-TOOLS for REFRIGERATION-AIR CONDITIONING

Complete Stock—Quick Service

One-day service on your order for any parts, supplies or tools you may need for any type of refrigerator or air conditioner. QUALITY MERCHANDISE, absolutely guaranteed and offered at the lowest prices. Deal with us—obtain all your needs from one source—and rely absolutely on getting exactly what you order. WHOLESALE ONLY for your protection. Request big, complete, new catalog on your business card or letterhead. It's FREE.

SEND FOR BIG FREE CATALOG

AIRO SUPPLY CO. 408-10 N. Wells St. CHICAGO, Ill.

ALL YOUR NEEDS FROM ONE SOURCE

Use THIS CATALOG for FASTER SERVICE

Write for Your Copy

Complete stocks of guaranteed dependable parts and accessories for refrigeration and air conditioning — no substitution — "same day shipment"—that's typical Borg Warner service. *May we earn the right to all your business by serving you better?*

"Products of Experience"

BORG WARNER SERVICE PARTS CO.

BORG WARNER SERVICE PARTS CO.
Division Borg-Warner Corporation
2100 Indiana Avenue Chicago, Illinois

NOW!

HASCO CHANGE-OVER

For all models of Frigidaire Compressors

Basic Appliance Service Company
Greensboro, North Carolina

Ready for your use — a new catalog featuring the

HASCO CHANGE-OVER

Complete modernization for old compressors. The Change-Over gives new design, new appearance, new economy. **Easy to install**—no holes to drill—no metal to cut. Sold exclusively by HASCO. Get the details from this new catalog—**send for your copy today.**

We also stock a complete line of **Ultra Precision Parts,** backed by the HASCO guarantee of mechanical perfection.

HOME APPLIANCE SERVICE CO.
714-16 W. Market St. Greensboro, N. C.

REFRIGERATION AIR CONDITIONING

PARTS · TOOLS · SUPPLIES

LARGEST STOCKS · WIDEST SELECTION · FASTEST SERVICE

Wholesale Only

OUR CATALOG PROTECTS YOU · SEND FOR IT NOW

133 N. WACKER DRIVE **H. CHANNON CO.** CHICAGO

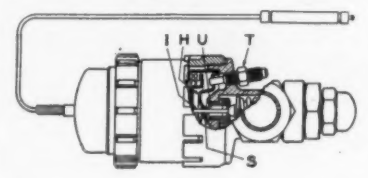
Valve Headers Used For Connection of Surface Coolers

(*Concluded from Page 33, Column 3*)

this may interfere with the accuracy of the expansion valve operating due to the higher pressure existing at the inlet tending to cause the valve to close and starve the coil. If the pressure difference between the inlet and outlet of the coil exceeds 4 lbs., it may not be possible to adjust the valve to properly compensate and the result will be inefficient coil operation.

In order to overcome this condition

Figure 5

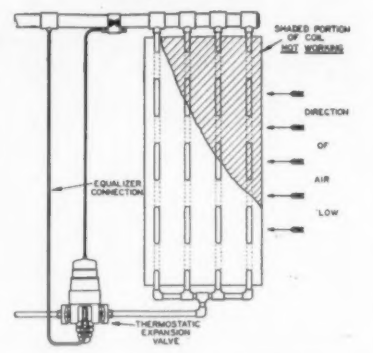


the type of valve shown in Fig. 5 is provided with an equalizer connection which connects between the valve and the suction line so as to permit the valve to operate from the pressure at the suction end of the coil rather than the pressure at the inlet. This equalizer connection is particularly important when using a distributing header such as described later, which may in itself produce a considerable pressure drop.

In Fig. 4 it should be noted that a baffle plate "H" is interposed between the body of the valve and the bellows "G" so as to isolate it from the pressure existing in the body.

An equalizer connection "T" as shown in Fig. 5 pierces through the baffle plate and communicates with the bellows chamber. This connection "T" being connected to the suction end of the evaporator allows the bellows to respond to the pressure existing only at the outlet end of the coil and the valve, therefore, operates to maintain a constant degree of

Figure 6



superheat of the gas leaving the coil regardless of the amount of pressure drop through the coil.

The modern type of finned coil is generally constructed with a comparatively small size tube, in most cases this being about ⅝ of an inch or ¾ of an inch O.D. This size tube is limited in the amount of refrigeration capacity that it will handle due to the building up of excessive pressure drop on large capacities.

Therefore, on large size coils it becomes necessary to operate tubes in multiple and this presents a very serious problem in the distribution of refrigerant to the various tubes.

Several years ago it was not at all uncommon to find a large evaporator connected up as shown in Fig. 6, with the result that it was difficult or impossible to obtain high efficiency from the coil. Note that the arrangement of the coil places the various passes in such a position that they receive unequal loads. The pass next to the incoming warm air has a much higher rate of heat transfer than the pass on the other side of the coil in the path of the cooled air. Since the pressure drop between the inlet and outlet header must be equal in the various passes it is obvious that a portion of the coil will be starved.

The use of orifices at the inlet header to proportion the amount of refrigerant entering each of the tubes has been tried, but generally involves difficulty because the distribution does not remain constant under various conditions of load. The coil shown in Fig. 6 would be greatly improved if the passes were rearranged so that each had an equal load, but there would still be the problem of distributing the refrigerant equally to each tube.

The problem of refrigerant distribution is complicated by the fact that refrigerant leaving the expansion valve is a mixture of liquid and vapor of rather low quality. The proportion of liquid to vapor leaving the expansion valve may be 80% by weight, but

Figure 4

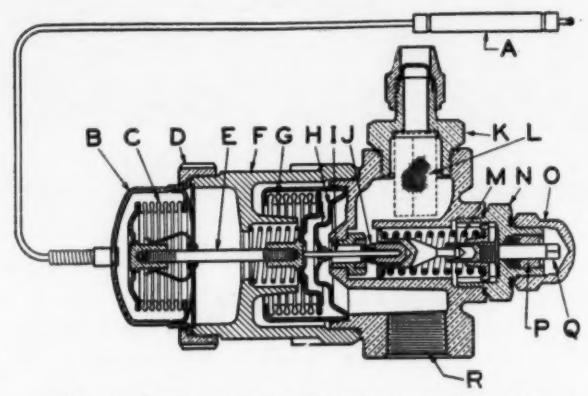
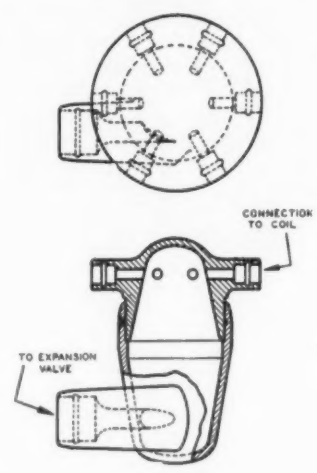


Fig. 4—Large capacity Detroit expansion valve.

when calculated on the basis of volume it will be found to be 5% or less.

In other words, by volume the refrigerant leaving the expansion valve is over 95% gas. Unless the velocity through the header is maintained

Figure 7

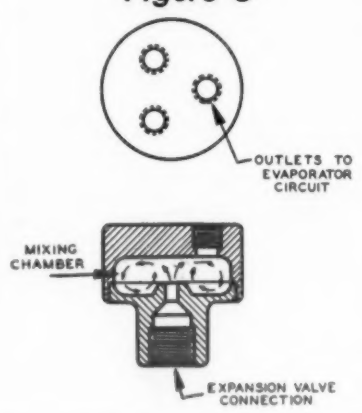


sufficiently high, the liquid and vapor separate, making distribution extremely difficult.

Through the courtesy of several manufacturers we are permitted to describe several types of distributing headers which are in successful use. Fig. 7 shows the header developed by the Carrier Engineering Corp. The refrigerant enters tangentially near the bottom causing the liquid to definitely separate and whirl around the outside while the gas passes up through the middle.

Coil connections are located at the

Figure 8

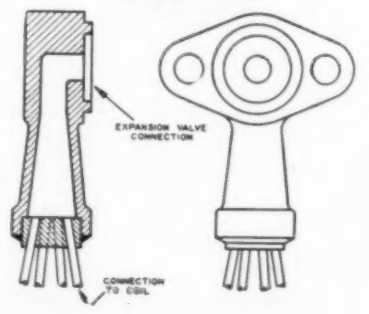


top and equally spaced so that each connection receives exactly the same quantity of liquid refrigerant. This header will operate satisfactorily in either a vertical or horizontal position and provides equal distribution without the necessity of a large pressure drop.

Fig. 8 shows the distributing header as used by the York Ice Machinery Corp. The refrigerant enters this distributor in the form of a high velocity jet which swirls around the inside as indicated by the arrows and insures a uniform mixture of liquid and vapor with the result that each outlet tube receives an equal proportion of refrigerant. Any number of outlet connections can be provided.

Fig. 9 shows a distributing header

Figure 9



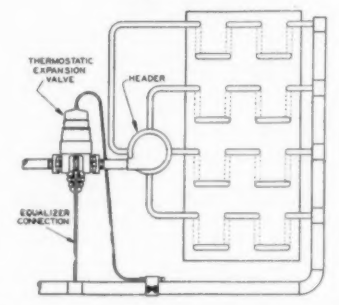
as used by the Westinghouse Electric & Mfg. Co. In this header the refrigerant enters at high velocity and is allowed to expand through a cone shaped passageway. At the bottom of the cone is a plug which carries a multitude of small tubes which connect to the coil.

The velocity in the header is maintained high enough to insure uniform distribution. The small tubes connecting between the header and the coil can easily be bent for convenience in installation.

Method of connecting up the distributing header to the coil is shown in Fig. 10. Note that each pass through the coil is arranged so as to have equal loading, and, therefore, each tube requires the same amount of refrigerant.

This sketch also shows the method of connecting the equalizer tube of the expansion valve into the suction line so that the valve responds to the pressure at the exit of the coil and permits the coil to work at maximum efficiency regardless of the amount of pressure drop through the coil. The equalizer connection also makes the

Figure 10



valve operation independent of the pressure drop which may exist through the distributing header.

A somewhat different method of obtaining distribution through the coil is employed by Bruce Palmer Inc., Detroit, and is shown in Fig. 11. Due to the fact that 80% or more of the refrigerant entering the coil is in the liquid form, there is a much slower velocity entering the coil than there is at the exit when all of the liquid has been vaporized into gas. The arrangement shown in Fig. 11 takes this fact into consideration by causing the refrigerant leaving the expansion valve to pass through a single tube for a portion of the coil surface until its velocity has been increased sufficiently to prevent separation of liquid and vapor.

The tube is then teed into two tubes which likewise pass through sufficient surface again to build up the velocity to where it can be further split up. We are advised that successful designs of the type of coil shown in

Figure 11

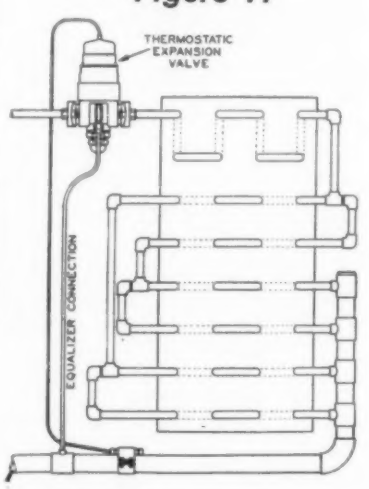


Fig. 11 have employed refrigerant velocities of between one thousand and two thousand feet per minute before entering the tee and splitting into two feeds.

This design of coil has possibilities, in that it can be designed to maintain a comparatively uniform refrigerant velocity without excessive pressure drop.

AIRLINE PRODUCTS • •
MODERN WATER COOLERS

- 3 to 1000 Gallons per Hour
- Cabinets Complete with Lowsides
- Spear Ice Water Generators
- Efficient Internal Tube Coolers

• Send for Catalog

RICHMOND ENGINEERING CO.
2914 Richmond Street Philadelphia, Pa.

Patents

Issued July 7, 1936

2,046,314. ROOM COOLING UNIT. George N. Benkly, Paris, France. Application October 26, 1932. Serial No. 639,653. 6 Claims. (Cl. 62—136.)

2,046,319. COOLING APPARATUS AND METHOD. Claude A. Bulkeley, New York, N. Y., assignor to Niagara Blower Company, New York, N. Y. Application April 13, 1934. Serial No. 720,446. 13 Claims. (Cl. 62—152.)

2,046,351. UNDERFLOOR DUCT BOX. Hervey S. Walker, Ardmore, Pa. Original application November 25, 1933. Serial No. 699,649. Divided and this application May 26, 1934. Serial No. 727,713. 3 Claims. (Cl. 247—15.)

2,046,361. AIR CONDITIONING CONTROL CIRCUIT. John S. Baker, Chicago, Ill., assignor to Cook Electric Company, Chicago, Ill. Application September 20, 1933. Serial No. 690,216. 14 Claims. (Cl. 236—44.)

2,046,451. CONTROLLED SYSTEM USING SUBLIMATING REFRIGERANT. Ralph V. Grayson, Atlanta, Ga. Application March 22, 1934. Serial No. 716,897. 7 Claims. (Cl. 62—91.5.)

2,046,477. REFRIGERATING APPARATUS. Grayston R. Ohmart, Detroit, Mich., assignor to Kelvinator Corporation, Detroit, Mich. Application October 7, 1932. Serial No. 636,631. 14 Claims. (Cl. 74—66.)

2,046,480. HUMIDOSTAT. Frederick A. Pearson, Great Barrington, Mass. Application January 8, 1932. Serial No. 585,480. 9 Claims. (Cl. 297—1.)

2,046,666. AIR CONDITIONING APPARATUS. William B. Whitsitt, Baltimore, Md. Application March 11, 1932. Serial No. 598,260. 10 Claims. (Cl. 62—117.)

2,046,667. REFRIGERATING MECHANISM. Walter W. Williams, Bloomington, Ill. Application June 28, 1934. Serial No. 732,778. 3 Claims. (Cl. 62—115.)

2,046,716. METHOD AND APPARATUS FOR CONDITIONING AIR. Samuel M. Anderson, Sharon, Mass., assignor to B. F. Sturtevant Company, Hyde Park, Mass. Application July 13, 1931. Serial No. 550,383. 7 Claims. (Cl. 261—115.)

2,046,724. SEAL FOR REFRIGERATING APPARATUS. Ralph M. Buffington, Dayton, Ohio, assignor, by mesne assignments, to General Motors Corporation. Application April 5, 1933. Serial No. 664,582. 3 Claims. (Cl. 286—7.)

2,046,737. MULTIPLE STAGE BLOWER. Fritz Gosslau, Berlin-Charlottenburg, Germany, assignor, by mesne assignments, to Siemens Apparate und Maschinen Gesellschaft mit beschrankter Haftung, Berlin, Germany. Application October 26, 1934. Serial No. 750,042. In Germany October 30, 1933. 3 Claims. (Cl. 230—122.)

2,046,744. REFRIGERATING APPARATUS. Charles F. Henney, Dayton, Ohio, assignor, by mesne assignments, to General Motors Corporation. Application May 27, 1932. Serial No. 613,948. 2 Claims. (Cl. 189—55.)

2,046,802. AIR CONDITIONING APPARATUS. John Van Vliet and Patrick J. Brogan, Chicago, Ill. Application June 7, 1934. Serial No. 729,514. 2 Claims. (Cl. 299—63.)

2,046,894. REFRIGERATING APPARATUS. Robert R. Candor, Dayton, Ohio, assignor to General Motors Corporation, Dayton, Ohio. Application February 4, 1935. Serial No. 4,834. 3 Claims. (Cl. 62—3.)

2,046,895. AIR CONDITIONING APPARATUS. Rudolf D. Delamere, Toronto, Ontario, Canada, assignor to Delamere and Williams Limited, Toronto, Ontario, Canada. Application August 16, 1934. Serial No. 740,053. 7 Claims. (Cl. 261—89.)

2,046,909. REFRIGERATOR DOOR. Merrill H. Terry and Fred L. Stewart, Columbus, Ohio. Application September 26, 1934. Serial No. 745,607. 2 Claims. (Cl. 62—89.)

2,046,943. EVAPORATOR FOR REFRIGERATING MACHINES. Frank T. Grothouse, Fort Wayne, Ind., assignor to General Electric Company. Application January 30, 1935. Serial No. 4,120. Renewed November 22, 1935. 9 Claims. (Cl. 62—126.)

2,046,967. REFRIGERATING MECHANISM. Edwin M. Post, Jr., New York, and George O. Hanshew, Forest Hills, N. Y., assignors to International Motor Company, New York, N. Y. Application August 3, 1932. Serial No. 627,310. 1 Claim. (Cl. 62—6.)

2,046,968. COOLING SYSTEM. John C. Raisley, New Haven, Conn., assignor to Cool-Rite Products Corporation, New Haven, Conn. Application January 8, 1934. Serial No. 705,712. 4 Claims. (Cl. 62—103.)

2,047,039. REFRIGERATING MACHINE. Alexander R. Stevenson, Jr., Schenectady, N. Y., assignor to General Electric Company. Application December 5, 1934. Serial No. 756,095. 23 Claims. (Cl. 62—136.)

2,047,053. REFRIGERATING MACHINE. Robert U. Berry, Schenectady, N. Y., assignor to General Electric Company. Application December 5, 1934, Serial No. 756,111. 8 Claims. (Cl. 62—136.)

2,047,057. REFRIGERATING MACHINE. Harold W. Brown, Schenectady, N. Y., assignor to General Electric Company. Application December 6, 1934. Serial No. 756,109. 7 Claims. Cl. 62—136.)

2,047,131. MULTIPORT PLATE TYPE VALVE. Arthur L. Riche, Freeport, Ill. Application May 8, 1934. Serial No. 724,537. 11 Claims. (Cl. 277—24.)

2,047,169. AIR CONDITIONING APPARATUS. Alfred Weiland, Philadelphia, Pa., assignor to Baldwin-Southwark Corporation. Application December 29, 1933. Serial No. 704,418. 2 Claims. (Cl. 62—129.)

REISSUED

20,031. REFRIGERATING MACHINE. Roman C. Warneke, Fort Wayne, Ind., assignor to General Electric Company. Original No. 1,930,296, dated October 10, 1933. Serial No. 641,348, November 5, 1932. Application for reissue June 14, 1935. Serial No. 26,646. 20 Claims. (Cl. 62—115.)

PATENTS

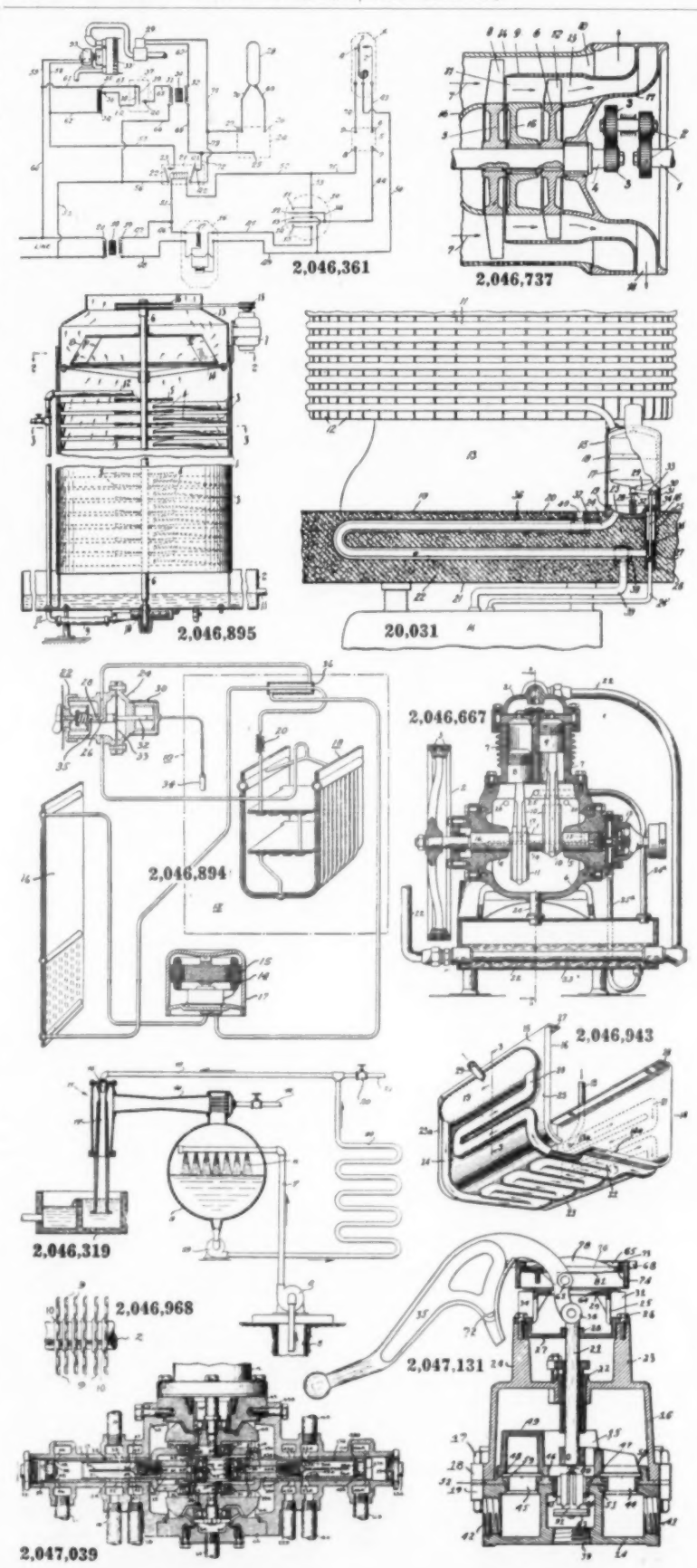
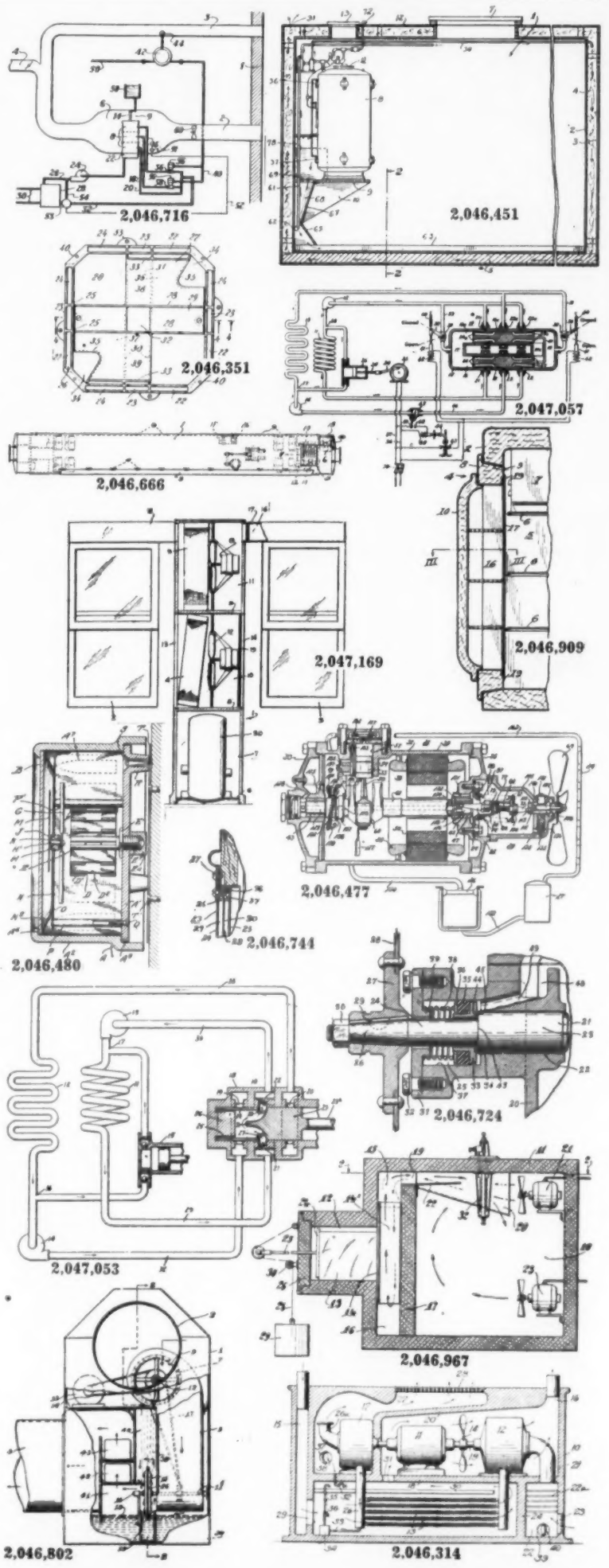
HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

Permanently efficient
...ARMSTRONG'S LK CORKBOARD

HELPS INSURE LASTING OPERATING ECONOMY FOR ANY TYPE OF REFRIGERATED EQUIPMENT

LOW conductivity and light weight are important advantages that win equipment manufacturers to the use of Armstrong's LK Corkboard. But an even *more* important advantage of this specially-developed refrigerator insulation is its ability to *maintain* its high efficiency even after long years of service. LK Corkboard is moisture-resistant and rigid . . . will not settle and pack in actual use.

Other features of this genuine cork insulation include ease and economy of installation. LK Corkboard is fabricated in extra-large size boards, up to 36″ x 36″. For samples and full information, write Armstrong Cork Products Co., Building Materials Division, 924 Concord Street, Lancaster, Pennsylvania.

FOR REFRIGERATION CONTRACTORS

For speedy delivery to refrigeration contractors, stocks of Armstrong's Corkboard and Cork Covering are conveniently located in principal cities. These branch warehouses can also supply the complete line of Armstrong sundries—the result of 30-years' practical experience in the most efficient methods of installing corkboard insulation and cork covering.